



bLuefish444



SD User Manual

Windows

SD| Greed
SD| Single Link Pro
SD| Fidelity
SD| Focus
SD| Prime

March 30, 2007



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Limited Warranty

Bluefish444 warrants that this product will be free from defects in materials and workmanship for a period of three 2 years from the date of purchase. This warranty is provided only to customers who register the Bluefish444 serial number at the place nominated on the Bluefish444 homepage. If a product proves to be defective during this three year warranty period, Bluefish444, at its option, will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, the customer must notify Bluefish444 of the defect before the expiration of the warranty period. The customer shall be responsible for packing and shipping the defective product to a designated service centre nominated by Bluefish444 with shipping charges prepaid. Bluefish444 shall pay for the return of the product to the customer.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Bluefish444 shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Bluefish444 authorized resellers to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage resulting or malfunction caused by the use of non Bluefish444 parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product.

This warranty specifically shall not apply to Bluefish444 products purchased second hand.

This warranty is given by Bluefish444 in lieu of any other warranties, expressed or implied. Bluefish444's responsibility to repair or replace defective products is the whole and exclusive remedy provided to the customer for any indirect, special, incidental or consequential damages.



Support Contact Details.

If you have any questions please contact support at support@bluefish444.com.

Email Support is free for the life of the warranty.

For phone support you must register your product at
<http://www.bluefish444.com/support/techsupport>.

In order to speed the resolution of your problem, please ensure that you provide the following information when contacting support.

- System configuration and manufacture, Mother board type and Devices installed.
- SCSI or RAID controller card type.
- Storage array configuration,
- OS version.
- Applications installed
- Bluefish444 Serial number and product type.

For phone support and access to other support resources, hardware configurations etc please register your card at the following website link;

<http://www.bluefish444.com/products/warranty/register.asp>

If an issue still exists please contact your integrator or reseller or contact Bluefish444 technical support;

World support@bluefish444.com

North America support-usa@bluefish444.com

Europe support@bluefish444europe.com

Australasia / APAC

9am to 5pm

(GMT+10 hours)

ph +61 3 9682 9136

support@bluefish444.com

North America

9am to 5pm

(GMT -5 hours)

ph 775-727-6950

support-usa@bluefish444.com

Europe

9am to 5pm

ph +44 (0)20 8868 2575

support@bluefish444europe.com



Introduction

Throughout this manual, reference the SD| Greed card will be made to encompass the Bluefish444 SD product range supported in the manual.

SD| Greed



SD| Greed is the latest PCI 32 bit, dedicated SD digital and analog video and audio card from Bluefish444. SD| Greed brings the highest quality SD video and audio to Windows, Apple and Linux platforms. SD| Greed is a combination of all our SD products and the needs of the professional studios all rolled in to one PCI card.

SD| Greed supports 12 bit digital SDI I/O, capable of supporting the complete range of SDI connection standards up to 12 bit Dual link (4:4:4) I/O including Dual link Video + Key (4:2:2:4). SD| Greed also supports selectable Single link SDI I/O (4:2:2) connections and simultaneous independent SDI I/O, allowing a range of operating modes such as simultaneous capture and playback, multiple independent captures and playback via the 3 customizable SDI outputs and two SDI input BNC cables.

SD| Greed supports analog video I/O using 12 bit and A/D and D/A converters which provide accurate conversion with extremely low noise. Analog sources acquired from Betacam SP are preserved at the highest quality.

SD| Greed supports a range of memory formats such as 10 and 8 bit RGB/YUV uncompressed video and Apple QuickTime v210. Support for DV25 and DV50 codecs is also supported all within your Apple Power Mac or Windows systems.

SD| Greed provides the most comprehensive audio I/O support of any card currently available today. SD| Greed supports balanced digital AES/EBU, embedded I/O, unbalanced S/P DIF, balanced XLR and unbalanced RCA analog audio I/O. SD| Greed supports 24 bit processing at 48Hz and includes hardware sample rate converters removing synchronization issues.

The sample rate converters are genuine, high order poly-phase interpolation filters rather than the minimalist algorithms found in some competing systems

SD| Greed also includes RS 422 deck control and bi level sync Genlock input

SD| Greed is a single 32 bit PCI card supporting 32 bit/64 bit PCI /PCI-X slots at 66/33 MHz bus speeds. SD| Greed comes with 5 connection ports for the 7 cables, providing flexible and customizable options that can be tailored to your specific requirements and cater to what ever source and monitoring equipment you have.



SD| Single Link Pro



SD| Single Link Pro is the latest PCI 32 bit, dedicated SD SDI digital and audio card from Bluefish444. SD| Single Link Pro brings the highest quality SD video and audio to Windows, Apple and Linux platforms. SD| Single Link Pro is a combination of all our SD products and the needs of the professional studios all rolled in to one PCI card.

SD| Single Link Pro supports a range of memory formats such as 10 and 8 bit RGB/YUV uncompressed video and Apple QuickTime v210. Support for DV25 and DV50 codecs is also supported all within your Apple power Mac or windows systems (Application dependant).

SD| Single Link Pro supports analog video I/O using 12 bit and A/D and D/A converters which provide accurate conversion with extremely low noise. Analog sources acquired from Betacam SP are preserved at the highest quality.

SD| Single Link Pro provides digital audio I/O support, SD| Single Link Pro supports balanced digital AES/ EBU, embedded I/O. SD| Single Link Pro supports 24 bit processing at 48Hz and includes hardware sample rate converters removing synchronization issues.

The sample rate converters are genuine, high order poly-phase interpolation filters rather than the minimalist algorithms found in some competing systems

SD| Single Link Pro also includes RS 422 deck control and bi level sync Genlock input

SD| Single Link Pro is a single 32 bit PCI card supporting 32 bit/64 bit PCI /PCI-X slots at 66/33 MHz bus speeds. SD| Single Link Pro comes with 5 connection ports for the 7 cables, providing flexible and customizable options that can be tailored to your specific requirements and cater to what ever source and monitoring equipment you have.



SD| Fidelity & SD| Focus



SD| Fidelity and SD| Focus is the latest Single link PCI Express 1 lane video card dedicated to SD digital and analog video and audio from Bluefish444.

SD| Fidelity and SD| Focus brings the highest quality SD video and audio to the Window platforms.

The SD| Fidelity and SD| Focus supports 12 bit digital SDI I/O, capable of supporting the complete range of SDI connection standards up to 12 bit single link YUV (4:2:2).

Both cards support analog video interfaces use 12 bit and A/D and D/A converters which provide accurate conversion with extremely low noise. Analog sources acquired from Betacam|SP are preserved at the highest quality.

SD| Focus supports analog video output monitoring only.

SD| Fidelity and SD| Focus supports a range of memory formats such as 10 and 8 bit RGB/YUV uncompressed video and Apple QuickTime v210. Support for DV25 and DV50 codecs is also supported all within your windows systems. (Application dependant)

SD| Fidelity and SD| Focus provides the most comprehensive audio I/O support than any other card currently available today. both support balanced digital AES/ EBU, embedded I/O, unbalance S/P DIF I/O. Both cards support balanced XLR and unbalanced RCA analog audio output. The SD| Fidelity additionally supports analog audio inputs.

SD| Fidelity and SD| Focus support 24 bit processing at 48Hz and including hardware sample rate converters removing synchronization issues.

The sample rate converters are genuine, high order poly-phase interpolation filters rather than the minimalist algorithms found in some competing systems

SD| Fidelity and SD| Focus also includes RS 422 deck control and bi level sync genlock input

SD| Fidelity and SD| Focus comes with 5 connection ports for the 7 cables, providing flexible and customizable options that can be tailored to your specific requirements and cater to what ever source and monitoring equipment you have.



SD| Prime



SD| Prime is the latest PCI express1 lane card, dedicated to SD SDI digital and audio I/O. SD| Prime brings the highest quality SD video and audio to Windows, Apple and Linux platforms.

SD| Single Link Pro supports a range of memory formats such as 10 and 8 bit RGB/YUV uncompressed video and Apple QuickTime v210. Support for DV25 and DV50 codecs is also supported all within your Apple power Mac or windows systems (Application dependant).

SD| Prime supports analog video I/O using 12 bit and A/D and D/A converters which provide accurate conversion with extremely low noise. Analog sources acquired from Betacam SP are preserved at the highest quality.

SD| Prime provides digital audio I/O support, SD| Prime supports balanced digital AES/ EBU, embedded I/O. SD| Prime supports 24 bit processing at 48Hz and includes hardware sample rate converters removing synchronization issues.

The sample rate converters are genuine, high order poly-phase interpolation filters rather than the minimalist algorithms found in some competing systems

SD| Prime also includes RS 422 deck control and bi level sync Genlock input

SD| Prime is a single 32 bit PCI card supporting 32 bit/64 bit PCI /PCI-X slots at 66/33 MHz bus speeds. SD| Prime comes with 5 connection ports for the 7 cables, providing flexible and customizable options that can be tailored to your specific requirements and cater to what ever source and monitoring equipment you have.



Feature Comparison

	SD Fidelity	SD Focus	SD Prime	SD Single Link Pro	SD Greed
Video Modes					
PAL 720 x 576 (4:3 and 16:9)	✓	✓	✓	✓	✓
NTSC 720 x 486 (4:3 and 16:9)	✓	✓	✓	✓	✓
Digital Video I/O Signal Formats					
8/10 bit SD SDI I/O	✓	✓	✓	✓	✓
Dual link 4:4:4, 4:4:4:4 (RGB) I/O					✓
Dual link 4:4:4, 4:4:4:4 (YUV) I/O					✓
4:2:2:4 Video and Key (YUV) I/O					✓
Single link 4:2:2 (YUV) Input	1	1	1	1	2
Single link 4:2:2 (YUV) Output	3	3	1	1	3
2 x Independent Video streams					✓
Routable Video channels					✓
Analog Video Input Signal Format					
12 bit Component YUV	✓				✓
12 bit Composite	✓				✓
12 bit S-Video	✓				✓
Analog Video Output Signal Format					
12 bit Component RGB	✓	✓		✓	✓
12 bit Component YUV	✓	✓		✓	✓
12 bit Composite	✓	✓		✓	✓
12 bit S-Video	✓	✓		✓	✓
Digital Audio I/O Signal Format					
6 channels of AES/EBU (Balanced, XLR)	✓	✓	✓	✓	✓
8 Channels of AES-3id (Unbalanced, BNC)	✓	✓	✓	✓	✓
16 Channels of embedded audio per SDI	✓	✓	✓	✓	✓
Analog Audio Input Signal Format					
2 channels 0dBu (Balanced, XLR)	✓				✓
2 channels -10dBu (Unbalanced, RCA)	✓				✓
Analog Audio Output Signal Format					
2 channels 0dBu (Balanced, XLR)	✓	✓			✓
2 channels -10dBu (Unbalanced, RCA)	✓	✓			✓
File Formats.					
QuickTime, Cineon, DPX, AVI, Targa, TIFF	✓	✓	✓	✓	✓



	SD Fidelity	SD Focus	SD Prime	SD Single Link Pro	SD Greed
Hardware Features					
2 x General Purpose I/O ports					✓
LTC I/O ports					✓
Internal RS 422 Serial Ports	1 port	1 port	1 port	1 port	4 ports
External RS 422 Serial Ports	1 port	1 port	1 port		1 port
Audio sample rate converters	✓	✓	✓	✓	✓
Real-time hardware color space conversion	✓	✓	✓	✓	✓
Real time hardware overlay for internal keying	✓	✓	✓	✓	✓
Built-in safe area, safe title and letterbox generator	✓	✓	✓	✓	✓
Genlock	✓	✓	✓	✓	✓
Onboard Memory.					
Memory	32MB	32MB	32MB	32MB	64MB
PCI Interface					
PCI 32 bit 66 MHz or PCI 32 bit 33 MHz				✓	✓
Compatible with all PCI and PCI-X 64/32 bit Slots.				✓	✓
PCI Express 1 - lane (4 - lane compatible)	✓	✓	✓		

Embedded Audio Support

Embedded Audio via SDI will be supported in driver/SDK version 5.4.X



Software

Windows

Bluefish444 supports a range of software solutions and applications supported with the Bluefish444 retail installer that is shipped with your product box or downloadable on the Bluefish444 web site in the downloads section.

Symmetry is Bluefish444's proprietary integrated DI acquisition, review and play out software for Windows and is included with all Bluefish444 video I/O cards.

Symmetry was designed as a Digital Intermediary or as a capture and playback solution for digital content creators, compositors and editors that work in either 10 bit RGB or 10 bit YUV colour space. Its flexibility and intuitive interface means that it easily integrates into any video or film post production environment.

Bluefish444 continually updates Symmetry's feature set allowing customers to constantly upgrade to new features – at no charge. Symmetry is a FREE integrated software solution for the Bluefish444 I/O video card product range.

The Bluefish444 retail installer ships with the following software features and application support;

Note

Bluefish444 provide for free the Symmetry DI application. And plug ins for some 3rd party application support.
3rd party applications are not included.

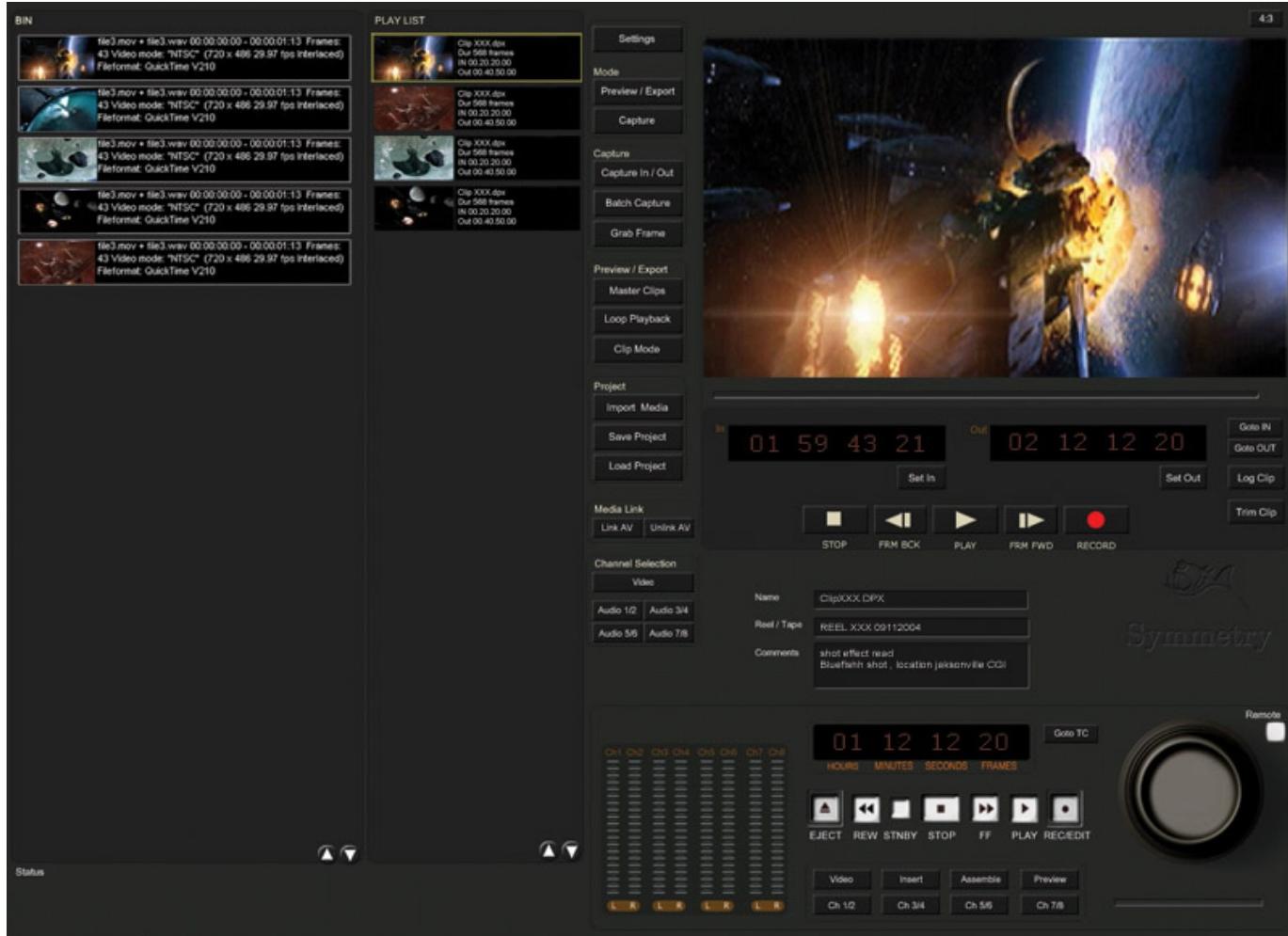


oxygen | VS





Bluefish444 Symmetry



Symmetry is Bluefish444's proprietary integrated DI acquisition, review and playout software for Windows and is included with all Bluefish444 video I/O cards.

Symmetry was designed as a Digital Intermediary or as a capture and playback solution for digital content creators, compositors and editors that work in either 10 bit RGB or 10 bit YUV color space. Its flexibility and intuitive interface means that it easily integrates into any video or film post production environment.

Bluefish444 continually updates Symmetry's feature set allowing customers to constantly upgrade to new features – at no charge. Symmetry is a FREE integrated software solution for the Bluefish444 I/O video card product range.

Supported Video Modes

- HD 1920 X 1080i 60, 59.94, 50
- HD 1920 X 1080p 30, 29.97, 25, 24, 23.97
- HD 1920 X 1080psf 24, 23.97
- HD 1280 X 720p 59.94, 50
- PAL & NTSC 4:3 and Widescreen



File Formats

Video

- 10 bit RGB Cineon Sequential file format
- 10 bit RGB DPX Sequential file format
- 10 bit YUV QuickTime v210
- 8 bit RGBA TARGA
- 8 bit YUV AVI
- MPEG 2

Audio

- Uncompressed wav 16 bit 48kHz PCM format.
- Compressed MPEG 4 (Via MPEG)

Features

- Play list and clip assembly for preview and exporting to tape.
- Trim clip mode.
- Right Click Context menus.
- Keyboard short cuts.
- Offline file and Missing media import or capture.
- Save and load projects in XML format for versatile 3rd party application support and project archiving.
- 8 channels of capture and playback, (or more depending on hardware).
- Audio and Video linking and unlink ability to create Sym files.
- Audio level monitoring.
- Frame accurate RS 422 deck control.
- Drop frame and non drop frame time code support.
- Drop frame error reporting on capture and playback reporting.
- Built in system bench marking and logging.
- SMPTE and CGR scaling for 10 bit RGB file formats.
- Force scaling option for APPLE SHAKE Rendered files.
- Capture clip and master clip.
- Assemble and Insert to tape.
- Single frame grab to supported file formats.
- Batch capture and capture clip.
- Deck control interface with shuttle, jog frame advance and reverse.
- Desktop preview in playback and capture.
- 4:3 and 16:9 preview for SD widescreen footage.
- Single and dual link support.
- Loop playback.
- Go o deck time code.
- Status Bar.
- Import export and batch lists generated from AVID DS Nitris.
- Optimize capture option for fragmentation reduction on disk arrays.



System Requirements

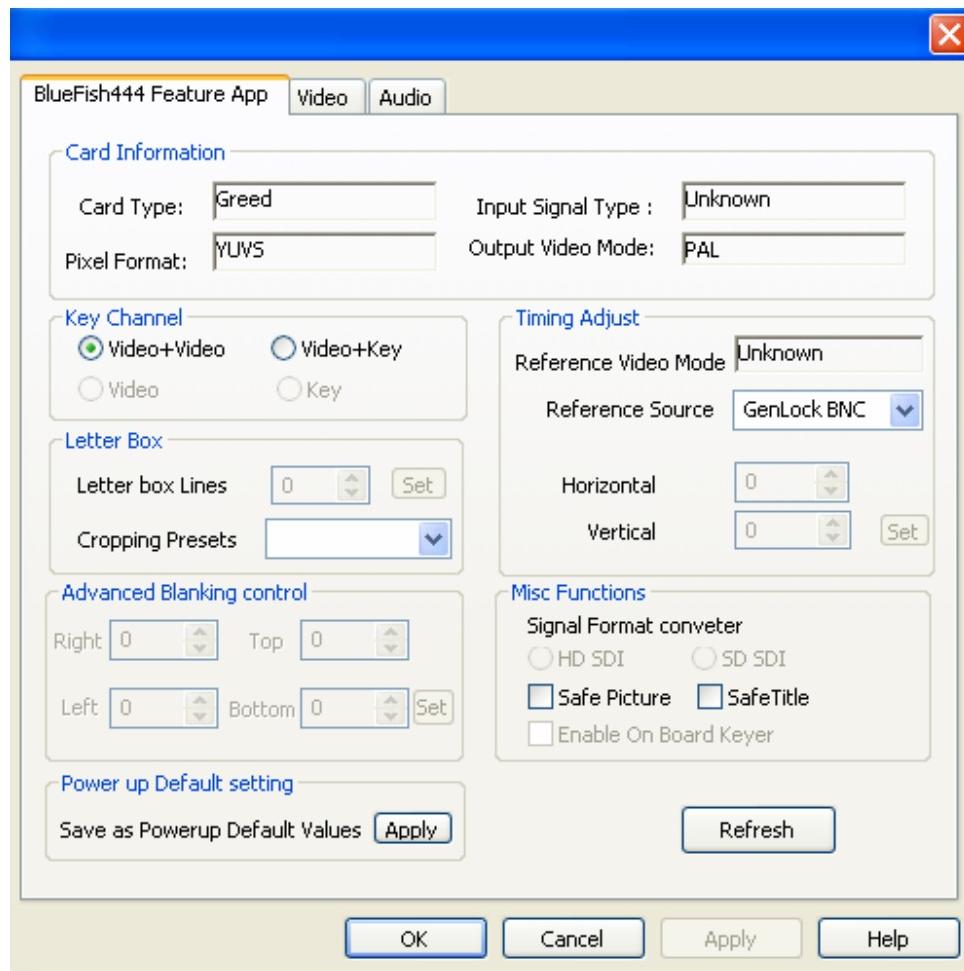
The following system requirements are for the SD product range running Symmetry

Uncompressed SD

	Minimum SD	Recommended (MPEG 2)
CPU	P4 3.4 GHz	Intel Dual Xenon 2.4 Ghz, Intel Duo Core 2 AMD Opteron 242+
Operating System	Windows XP SP2, QuickTime 6.5.2, Direct X 9.0C	Windows XP SP2, QuickTime 6.5.2 Direct X 9.0C
RAM	1GB	2GB or more for compositing applications
Chipset	925X and above	7505/7525 or AMD
Graphics	AGP /PCI express	AGP /PCI express
System Drive	SATA/PATA	SATA/PATA
Controller Device	PATA/SATA/SCSI/FC	SATA/SCSI/FC
Video Storage	SATA/SCSI 2 SATA drives RAID0	SCSI to SCSI/SATA, FC to SATA



Bluefish444 Feature Application



The Feature Application or “Feature App” is the Bluefish444 control interface that runs independently to the applications using the Video card.

It provides access the lower level functions of the Bluefish444 hardware that are not directly controlled by supported 3rd party applications.

The feature app controls signal format mode switching, scaling, analog or digital I/O selection, audio channel signal selection, letter box and sync input to name a few.

The feature app controls will be different for each card installed or selected.

The feature app also monitors current input and output modes and monitors current pixel or memory format the Bluefish444 card is in.

The feature app, depending on the installed Bluefish444 hardware will have different feature and tabs made available. For example the SD Greed card will have an extra analog TAB as compared to video cards that do not support analog I/O.

The feature app is covered in more detail later in this manual.



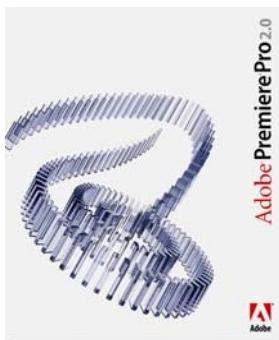
Adobe Production Studio

Bluefish444 continues to support one of the world's most popular editing packages.

Bluefish444 have developed plug ins for the following Software application supported in the Adobe Production Studio

- Adobe Premiere Pro 2.0
- After Effects 7.0
- Adobe Audition 2
- Adobe Photo shop CS2

Adobe Premiere Pro 2.0



(Application Software not included)

SD and HD 10 bit YUV uncompressed editor with software preview rendering
10 bit YUV uncompressed editing.

Bluefish444 provides native 10 bit YUV capture and editing of QuickTime v210 pixel format. Depending on the system performance you can play back uncompressed and compressed clips and sequential file formats that are supported by Adobe Premiere Pro 2, and are previewed and broadcast monitored in real time.

Supports playback of Adobe Premiere Pro 2.0 supported file formats such as AVI, DV, TGA, JPEG, TIFF, MPEG etc.





SD and real time effects preview.

Support for preview of the native Adobe Premiere Pro 2.0 effects & transitions software engine.

Note, performance of RT playback of effects will be dependant on how many layers are processed and the number of effects applied. When exporting all effects will be rendered to 10 bit YUV V210 pixel format before exporting to tape.

Multiple file format real time playback.

Uncompressed and compressed clip and sequential file formats that are imported into the Adobe Premiere Pro 2.0 timeline are previewed and monitored in real time via SDI.

SD DV offline.

With in Adobe Premiere Pro 2.0 you can capture to SD DV AVI file format via SD SDI.

SD DV AVI file format is 1/10th the size of SD 10 bit YUV uncompressed files, reducing storage capacity

Using SD DV is a great feature for offline editing and generating an edit decision list for SD and HD uncompressed offline editing.

SD DV offline AVI is an industry standard file format, providing DV editors with a migration option to uncompressed SDI I/O.

System Requirements.

	Minimum	Recommended
CPU	P4 3.0 Ghz	Intel Dual Xenon 2.4 Ghz, AMD Opteron 242+
Operating System	Windows XP SP2, QuickTime 6.5.2, Direct X 9.0C	Windows XP SP2, QuickTime 6.5.2, Direct X 9.0C
RAM	1GB	2GB
Chipset	925X, AMD	7505/7525 or AMD
Graphics	AGP /PCI express	AGP /PCI express
System Drive	SATA/PATA	SATA/PATA
Controller Device	SCSI	SCSI/FC
Video Storage	External SCSI to SATA	External SCSI to SCSI/SATA, FC to SATA

Real Time Playback in Adobe Premiere Pro 2.0

Bluefish444 has introduced real-time effects and multi file format playback within the Adobe Premiere Pro editing solution. Performance of RT Effects playback in Adobe Premiere Pro is scalable and increases as the system performance increases. The amount of data streams is based on the performance of the system CPU and the disk storages ability to access multiple streams of video and audio clips simultaneously to sustain real-time playback .

Factors slowing the performance of RT;

- Not using Bluefish444 v210 QuickTime files
- Compressed files that are traditionally complex to decode
- Multiple sequential files that are on a heavily fragmented disk array
- Using an unsupported storage solution or configuration
- Too many streams called for playback
- The type of effect used

Bluefish444 uses the QuickTime 10 bit YUV v210 pixel format in our Adobe Premiere Pro editing mode



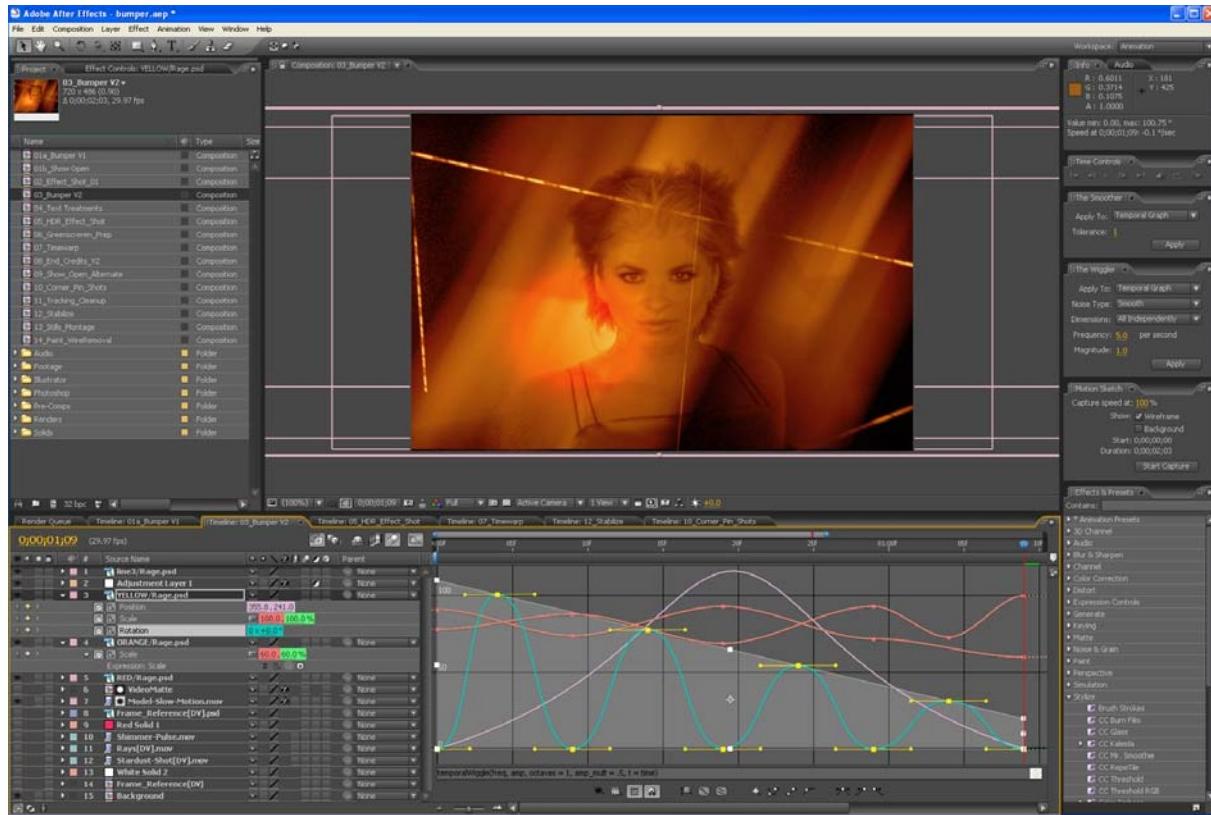
Adobe After Effects 7.0



(Application Software not included)

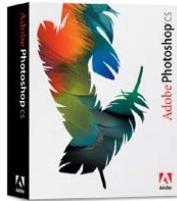
Animate your ideas. Adobe® After Effects® 7.0 software helps you create compelling motion graphics and blockbuster visual effects with efficiency, precision, and infinite variety. Take advantage of unmatched integration with other Adobe software, flexible 2D and 3D compositing, and hundreds of effects and Animation Presets to bring a new dimension to your film, video, DVD, and Macromedia® Flash® productions.

- HD and SD Broadcast real time monitoring
- Real-time playback via RAM player
- 8 and 10 bit RGB frame buffer support
- 8 and 10 bit project mode support
- Dedicated QuickTime v210 exporter





Photoshop CS/CS2



(Application Software not included)

Adobe® Photoshop® CS2 software, the professional image-editing standard and leader of the Photoshop digital imaging line, delivers more of what you crave. Groundbreaking creative tools help you achieve extraordinary results. Unprecedented adaptability lets you custom-fit Photoshop to the way you work. And with more efficient editing, processing, and file handling, there's no slowing you down.

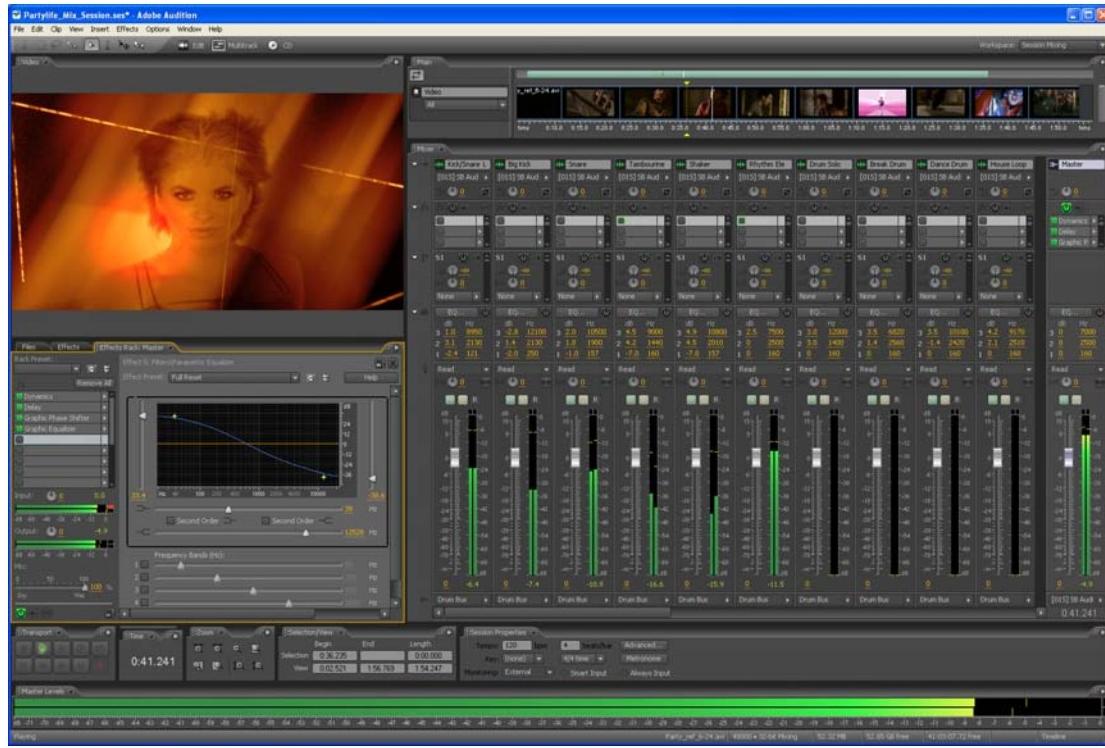
- HD and SD broadcast monitoring
- Action driven output, fully customizable via actions interface

Adobe Audition 2.0



(Application Software not included)

Record, mix, edit, and master digital audio files with powerful tools that bring flexibility and control to your desktop studio. Easily create music, produce radio spots, and restore imperfect recordings. Bring audio and video together using smart integration with Adobe video applications. Get professional results in real time with Adobe® Audition® 2.0 software.



- Monitoring of uncompressed audio channels equal to the Audio selected output.
- Support 48000Khz monitoring
- 6 channels of AES/EBU (Balanced, XLR) or
- 8 Channels of AES-3id (Unbalanced, BNC) or
- 2 channels 0dBu (Balanced, XLR) or
- 2 channels -10dBu (Unbalanced, RCA)



Combustion 4

(Application Software not included)



Bring your imagination to life and get your work done faster with the easy-to-use Combustion® interface, its efficient workflow, and extensive toolset. Autodesk® Combustion® 4 software is an all-in-one professional compositing application designed to meet the needs of the world's most demanding artists.

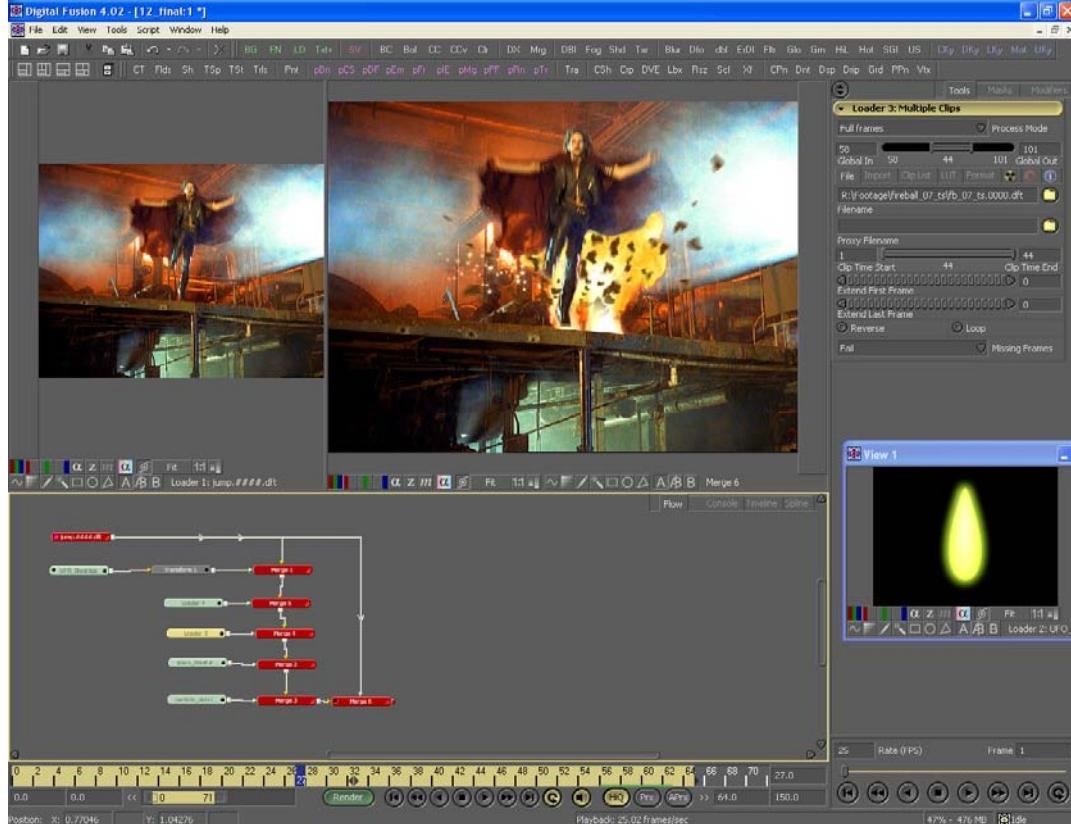
- SD Broadcast real time monitoring
- Real-time playback via RAM player
- 8 bit frame buffer support

Fusion 5.X

(Application Software not included)



Fusion® 5 is a full-featured, node-based compositing system with built-in backend tools via a powerful scripting engine with ODBC support. A perfect balance between a backroom power tool and a front room client station, Fusion 5 has it all. Not only does Fusion 5 have a real 3D environment with camera/lights support for leading 3D packages, it is also one of the most powerful and intuitive 3D particle systems on the market. With hardware-accelerated 3D capabilities, you can now migrate from pre-vis to finals within the same application. Eyeon's Fusion is a true synergy of 2D and 3D tools for ultimate compositing.



Integration of Bluefish444 into Fusion is developed by Eyeon using Bluefish444's SDK, Fusion artists have incredible performance and efficiency of system resources providing very fast and quick responses to changes to your flow and



previews.

Fusion supports both 8 and 10 bit frame buffer modes providing an incredible output through the Bluefish444 hardware.

Fusion allows artists the flexibility to monitor any node in any flow by a simple press of a key.

Fusion also has the ability to generate a preview of your flow and play it a rendered flow branch in real time. Taking advantage of your frame store/storage system and not restricting you to the amount of RAM available on your system.

Fusion can also take advantage of Symmetry, Bluefish444's deck control capture and play out software, free with all Bluefish444 products.

Artists can also render to these file formats and play out with symmetry for preview and export providing an effective, high quality RGB/YUV workflow preserving crucial file header and scaling information and eliminates costly file conversions and the risk of image degradation.

www.eyeonline.com

- SD Broadcast real time monitoring
- Real-time playback via Preview
- 8 and 10 bit frame buffer support

Supported 3rd Party Retail Applications

The SD| Greed, Focus and Fidelity products supports a range of retail and OEM solutions that are readily available from various resellers or directly from the manufacturer. SD| Greed provides professional editors, compositors and artists with a choice of solutions on various platforms. The support is continually growing.

The following applications require a particular driver/SDK version. Please refer to the manufacturer's website or the bluefish444 website for driver compatibility support for your applications.

For example the current retail installer 5.2.115 supports an SDK/Driver version 5.2.6.11.
You will need to ensure your 3rd party application supports that Driver.

For further information;

<http://www.bluefish444.com/support/compatibility/software/>



What's in the Box

SD Greed	SD Fidelity	SD Focus
A 32 bit PCI card with a blue PCB, multiple connectors, and a heatsink.	A PCI e 1 lane card with a blue PCB, a VGA port, and several other connectors.	A PCI e 1 lane card with a blue PCB and various connectors.
32 bit PCI Card. • CDROM Software and documentation including Symmetry application, Feature Application control panel, Adobe Production studio plugins for Premiere Pro, After Effects, Photoshop and Audition, QuickTime 10 bit YUV V210 Codec. • Warranty and Reference card cable connection guide. • 7 cables consisting of the following;	PCI e 1 lane Card.	PCI e 1 lane Card.

Digital Video I/O	1 x Mini Din 9 pin cable with 6 BNC Labeled 'DVID SDI', 'A/B/X', 'IN/OUT', 'Genlock'	A bundle of black cables with BNC connectors.
Analog Video I/O	1 x Mini Din 9 pin cable with 6 BNC consisting of 2 sets of 3 Labeled; AVID 'Y/G/CVBS', 'U/B/Y', 'V/R/C' *SD Focus does not support Analog Video input.	A bundle of black cables with BNC connectors.
Digital Audio S/P DIF I/O	1 x HD 15 pin with 8 BNC consisting of 4 pairs Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6', '7/8'.	A bundle of black cables with BNC connectors.
Digital Audio AES/EBU I/O	1 x HD Sub 15 pin with 3 male & 3 female paired XLR Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6'	A bundle of black cables with XLR connectors.
Analog Audio XLR I/O	1 x Mini Din 9 pin cable with 2 channels XLR Labeled 'AN AUDIO IN', 'AN AUDIO OUT', 'Left', 'Right' *SD Focus does not support Analog Audio input	A bundle of black cables with XLR connectors.
Analog Audio RCA I/O	1 x Mini Din 9 pin cable with 2 channels RCA Labeled 'AN AUDIO IN', 'AN AUDIO OUT', 'Left', 'Right' *SD Focus does not support Analog Audio input	A bundle of black cables with RCA connectors.
Deck Control	Mini Din 8 pin RS 422 to 232 deck control cable for SD Greed RS 422 ports. Symmetry and Premiere Pro do not support the Deck control port on the SD greed, Focus and Fidelity video cards. You must use the COM port	A single black cable with a Mini DIN connector.

**SD| Prime**

PCI e 1 lane card

Digital Audio S/P DIF I/O	1 x HD 15 pin with 8 BNC consisting of 4 pairs Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6', '7/8'	
Digital Audio AES/EBU I/O	1 x HD Sub 15 pin with 3 male & 3 female paired XLR Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6'	
Deck Control	Mini Din 8 pin RS 422 to 232 deck control cable for SD Greed RS 422 ports. Symmetry and Premiere Pro do not support the Deck control port on the SD Greed, Focus and Fidelity video cards. You must use the COM port	

**SD| Single Link Pro**

Digital Audio S/P DIF I/O	1 x HD 15 pin with 8 BNC consisting of 4 pairs Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6', '7/8'	
Analog Video I/O	1 x Mini Din 9 pin cable with 6 BNC consisting of 2 sets of 3 Labeled; AVID 'Y/G/CVBS', 'U/B/Y', 'V/R/C' * SD Focus does not support Analog Video input.	
Digital Audio AES/EBU I/O	1 x HD Sub 15 pin with 3 male & 3 female paired XLR Labeled 'DIG AUDIO IN', 'DIG AUDIO OUT', '1/2', '3/4', '5/6'	
Deck Control	Symmetry and Premiere Pro do not support the Deck control port on the SD greed, Focus and Fidelity video cards. You must use the COM port	



System Requirements

Motherboard

Below are the system requirements the SD product range.

Please note the requirements are general and performance may be different for each motherboard.

For a certified list of motherboards and recommendation please refer to the hardware certification guide at

<http://www.blufish444.com/support/compatibility/hardware/>

Card	SD Greed	SD Focus
		
	SD Single Link Pro	SD Fidelity
		
		SD Prime
		
Slot Type	32 bit PCI Card.	PCI e 1 lane Card.
Slot requirements	32 bit PCI slot or PCI/PCI X 64 bit slot motherboard NOTE; Installation should be on a separate PCI buss to that of the Storage Host controller.	PCI e 1, 4 or 8 lane motherboards
Chipset	925/975/7505/7525 or AMD 200 +	975/7505/7525 or AMD 200 +
Memory	2GB minimum (Application dependant)	
Direct X	Direct X 9c	
QuickTime	7.0.1	
OS	Windows XP SP2	
CPU	Uncompressed I/O 3.0 GHz single core Or 2.0 dual core and above MPEG2 I/O 2.66 Dual Core or above	



Slot Configuration

For the Bluefish4444 SD product range the most important feature you must be aware of is the Clock speed and what slot you install your Bluefish444 card into.

In PCI architecture where slots share the same bus, each slot will be as fast or clock down to the slowest device installed. For PCI e this does not occur.

For PCI 32 bit slot cards such as the SD| Greed and the SD| Single link Pro the Clock speed of the PCI bus varies with each slot type;

Installed Slot	Buss Speed
32 bit slot	33 MHz
64 bit slot	66 MHz

Slot installation

In most cases you will be using a SCSI or Fiber channel Host controller card supporting a PCI X 133 slot.

Care must be taken when installing the Bluefish4444 SD 32 bit PCI card with such devices.

It is a requirement that the Host controller card is not installed on a bus shared with the Bluefish444 PCI 32 card or it will affect performance of the PCI X 133 controller card.

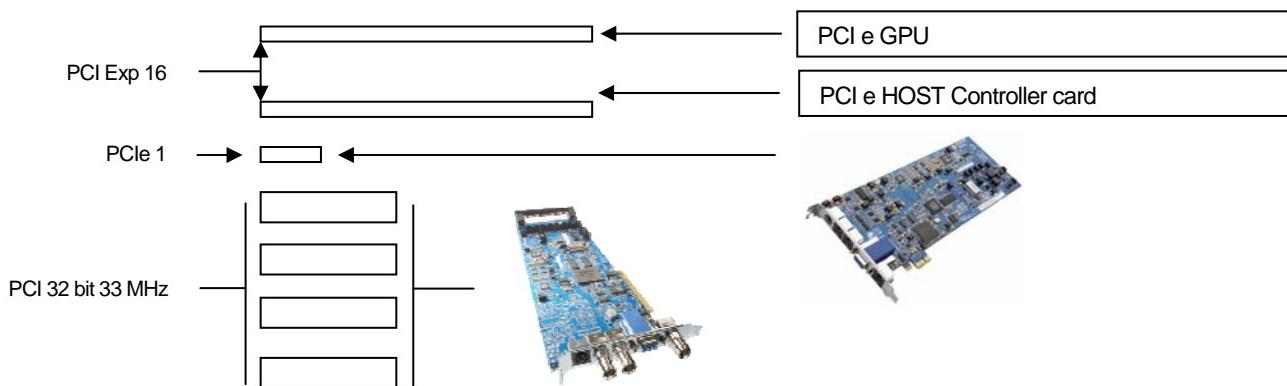
Refer to your motherboard/system manual regarding the bus configuration and what slots are shared.

ZCR Slots

In some motherboards the Zero Channel RAID slot which is us

Below are some common Slot /Device installation examples.

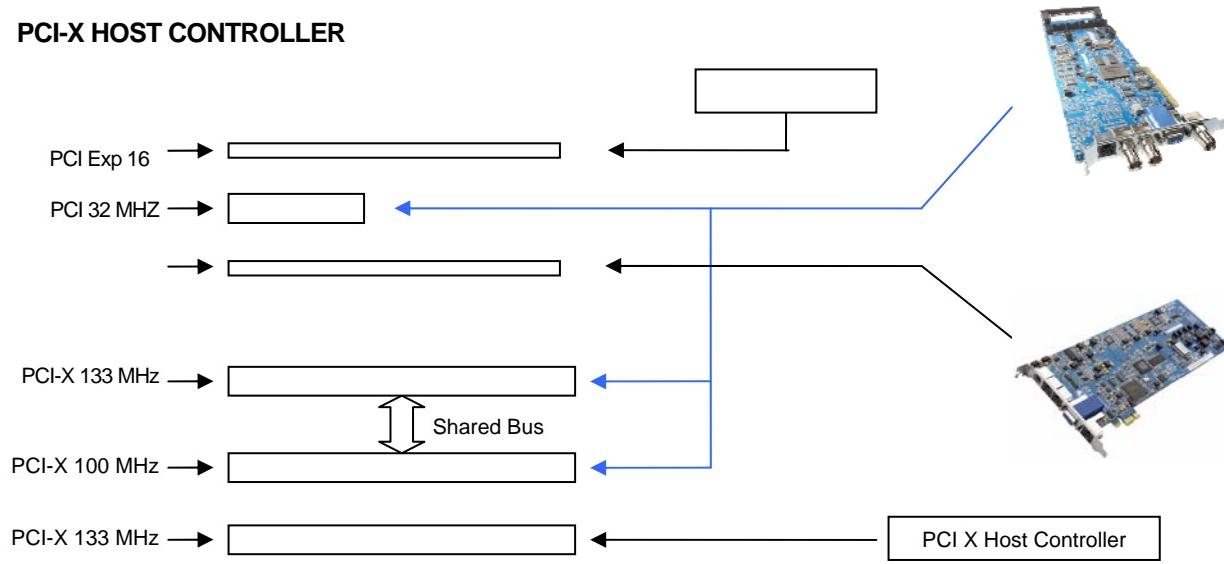
Intel 975BX



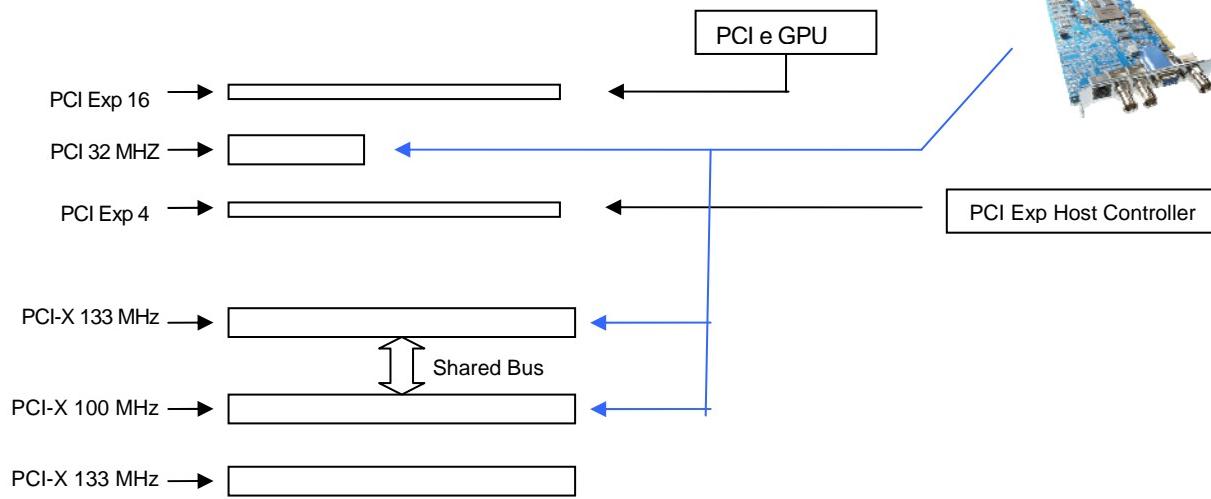


Supermicro X7DAE

PCI-X HOST CONTROLLER



PCI-Exp HOST CONTROLLER





Dual stream vs Single stream.

The SD greed has a range of powerful features that a designed to work with a range of specialized OEM applications. One ability is the dual independent stream feature of the SD| Greed card which in affect allows a single card to act as multiple cards for each physical input and output channel.

This is referred to dual Independent streaming where you can have simultaneous inputs and outputs and assign these channels as separate sessions.

For applications that support these features, you will require the install the SD| Greed in a PCI slot that is 66 Mhz or faster.

SD Fidelity, Focus, Prime and Single link Pro do not support the dual independent stream feature.

Storage Requirements

The SD product range is primarily an uncompressed capture and playback card providing an unprecedented level of quality on the Windows, Linux and Apple Mac OS systems. Bluefish444 recommends that your storage system be able to provide and sustain a data rate up to 45 MB per sec for single stream applications and at least up to 90 MB for dual stream and above for multiple stream solutions.

Onboard SATA Controllers.

Modern mother boards come with more than one SATA controller that can apply hardware RAID across multiple SATA drives. In most cases these solutions can provide adequate performance for uncompressed SD I/O and editing, however performance can vary between motherboards manufactures. It is recommended that this storage type configuration is tested fully.

Storage Capacity Guide

W X H X Rate E.G. PAL v210 = (720 X 576 X 40/15) MB/sec	RGB(10) (40/10) MB/sec	RGBA(8) (40/10) MB/sec	RGB (8) (40/13) MB/sec	V210 (40/15) MB/sec	BV10 (40/16) MB/sec
Standard Definition					
720 X 576I @ 50	41.57	41.57	31.10	27.65	25.92
720 X 486I @ 60/1.001	41.98	41.98	31.46	27.97	26.22
1 hour	151 GB	151 GB	131 GB	100 GB	94 GB
5 hours	755 GB	755 GB	655 GB	500 GB	470 GB

Certified Storage for Real Time Solutions

Bluefish444 continually test and certify storage and controller solutions as they become available. Look for the RT certified solution logos for SD and HD workstations and storage solutions that are "RT" ready with your Bluefish444 hardware.

For a list of storage solution vendors go to the Bluefish444 web site at:
<http://www.bluefish444.com/support/compatibility/hardware/mediaarray.asp>



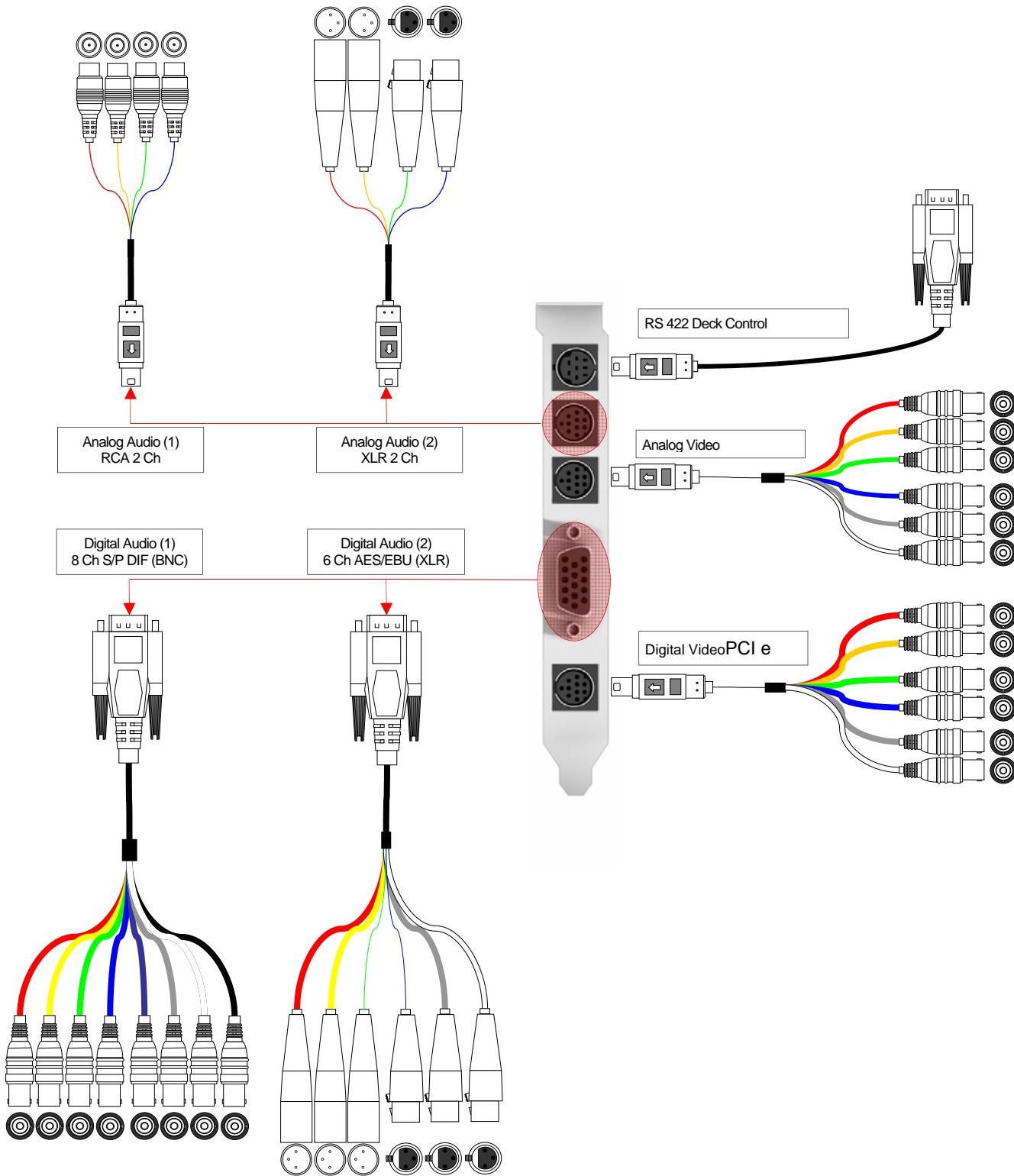


Cable Connection



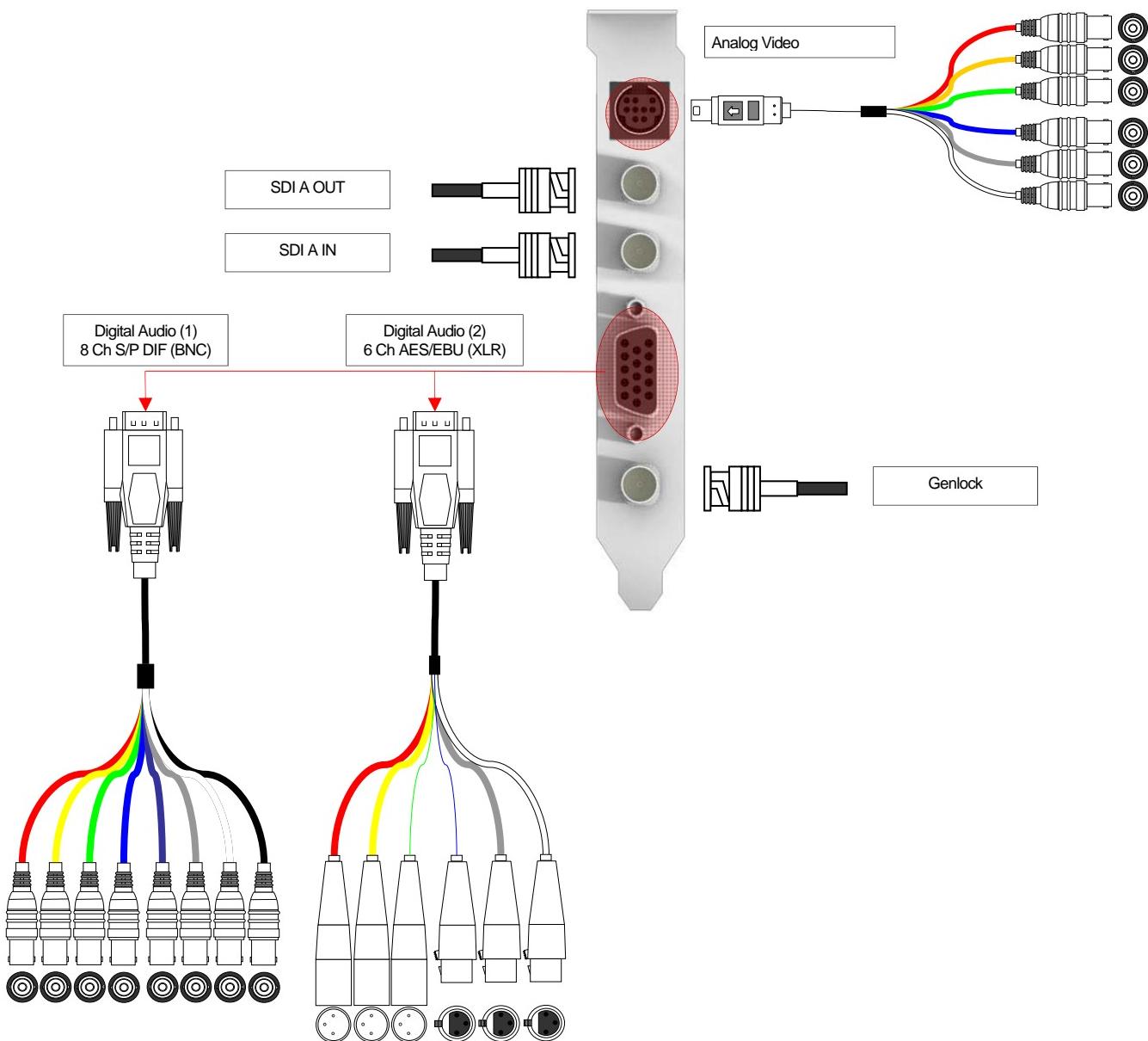


SD| Greed
SD| Fidelity
SD| Focus



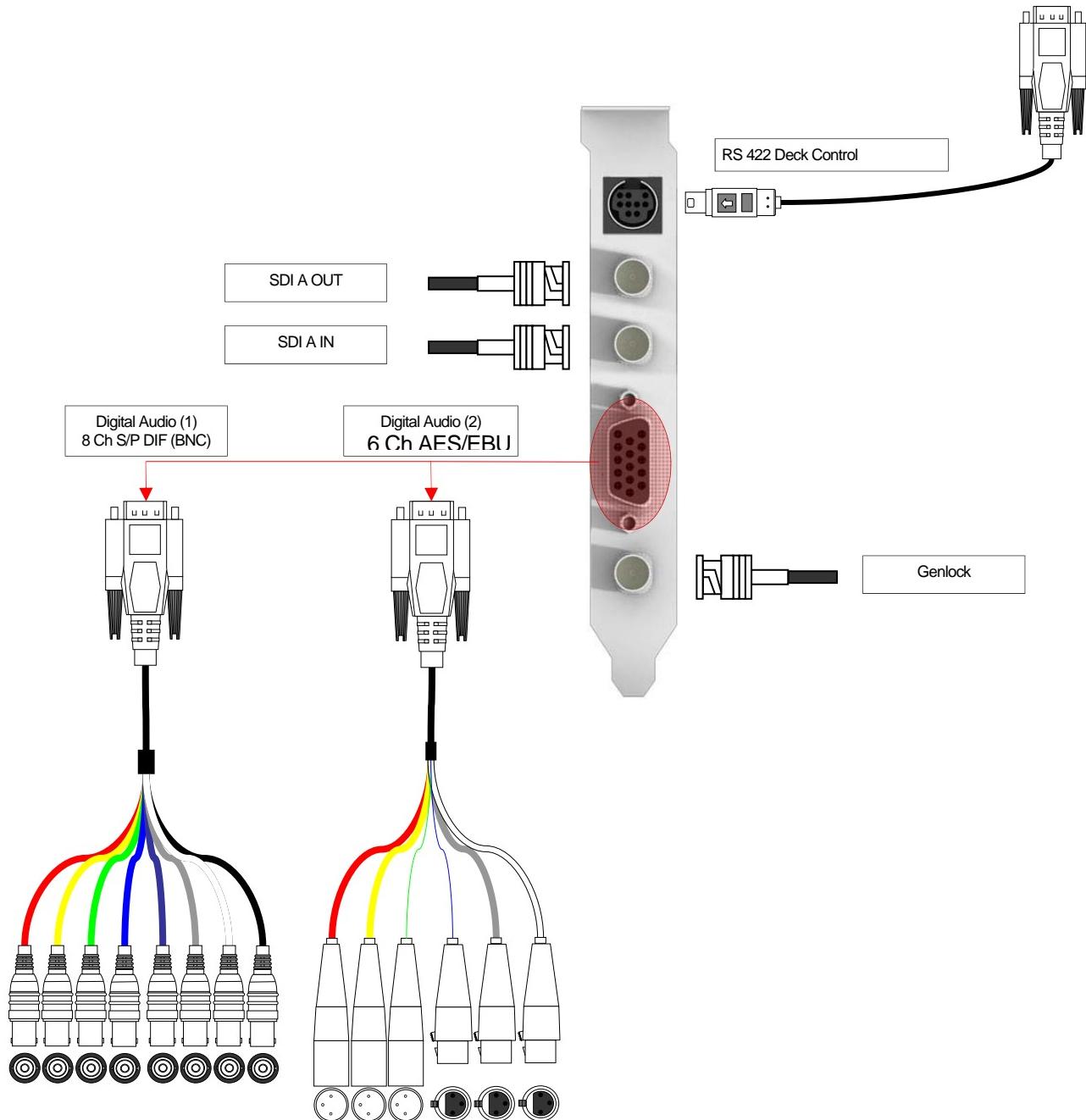


SDI Single Link Pro





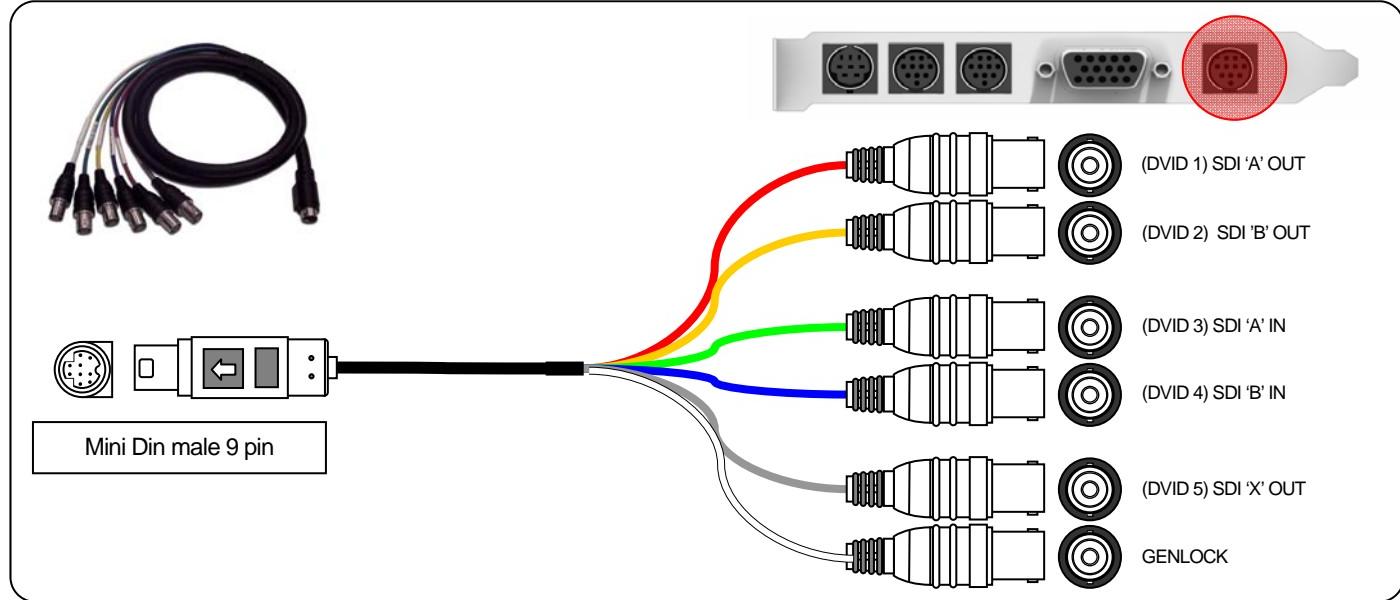
SDI Prime





Cable Types

Digital Video I/O & Genlock



SD| Greed

Supports two SDI inputs and two SDI outputs. SD| Greed supports independent inputs and outputs allowing for a combination of two simultaneous capture and playback streams.

The Digital video cable can be customized to support a range of SDI dual link and single link modes. The auxiliary SDI can be either used as a 3rd output which can be configured to monitor dual link modes as a single link 4:2:2 connection.

SDI inputs and outputs support a total of 16 channels of embedded audio, 8 channels per SDI

Reference input is BI Level via supported by 1 x BNC Bi level Sync. All card outputs are unconditionally stable. SDI outputs always meets SMPTE jitter specifications with or without Genlock.

SD| Fidelity and SD| Focus

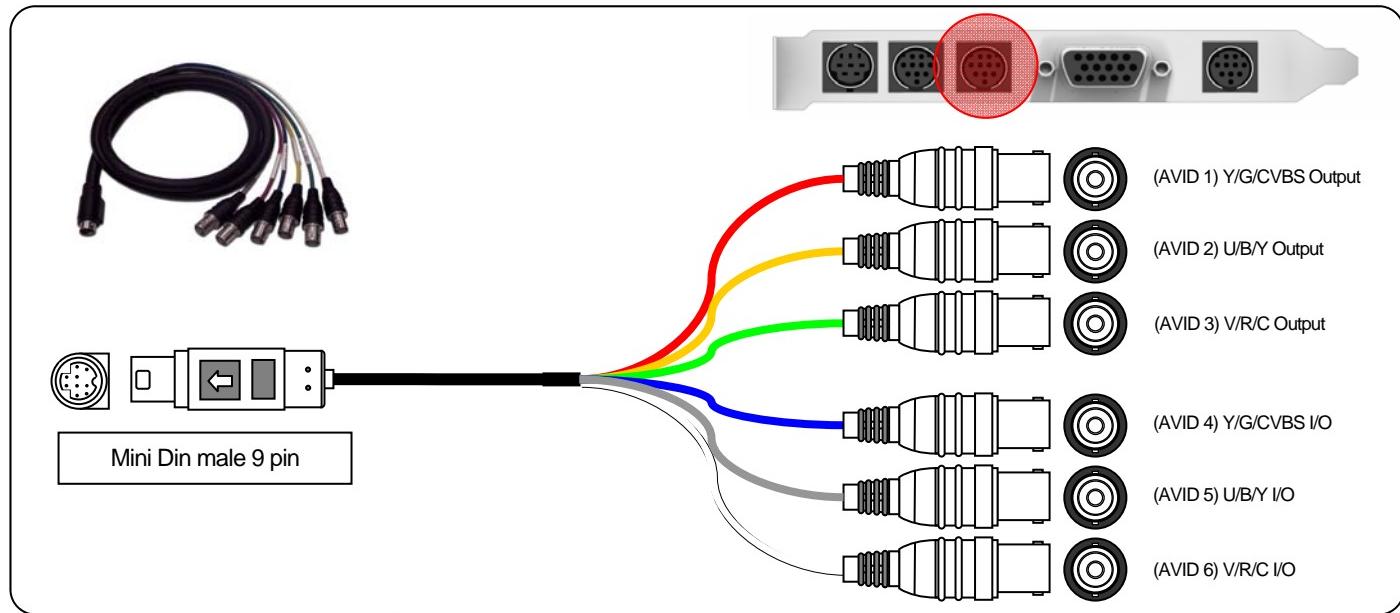
Supports the SDI A NI, OUT and Genlock connectors only

Type	Supported Mode	Label	Cable Color
2 X SDI Inputs (BNC)	Dual Link 4:4:4, 4:4:4:4, Video + Key, 4:2:2:4, Dual independent, 2 X 4:2:2	DVID 3 SDI "A" In DVID 4 SDI "B" In	GREEN BLUE
2 X SDI Outputs (BNC)	Dual Link 4:4:4, Video + Key, Dual independent,	DVID 1 SDI "A" Out DVID 2 SDI "B" Out	RED YELLOW
Genlock (BNC)	Genlock	Genlock	WHITE

Card	Supported Cables
SD Greed,	All points and modes
SD Focus	All Outputs (Video output is mirrored), SDI A In
SD Fidelity	All Outputs (Video output is mirrored), SDI A In



Analog Video I/O



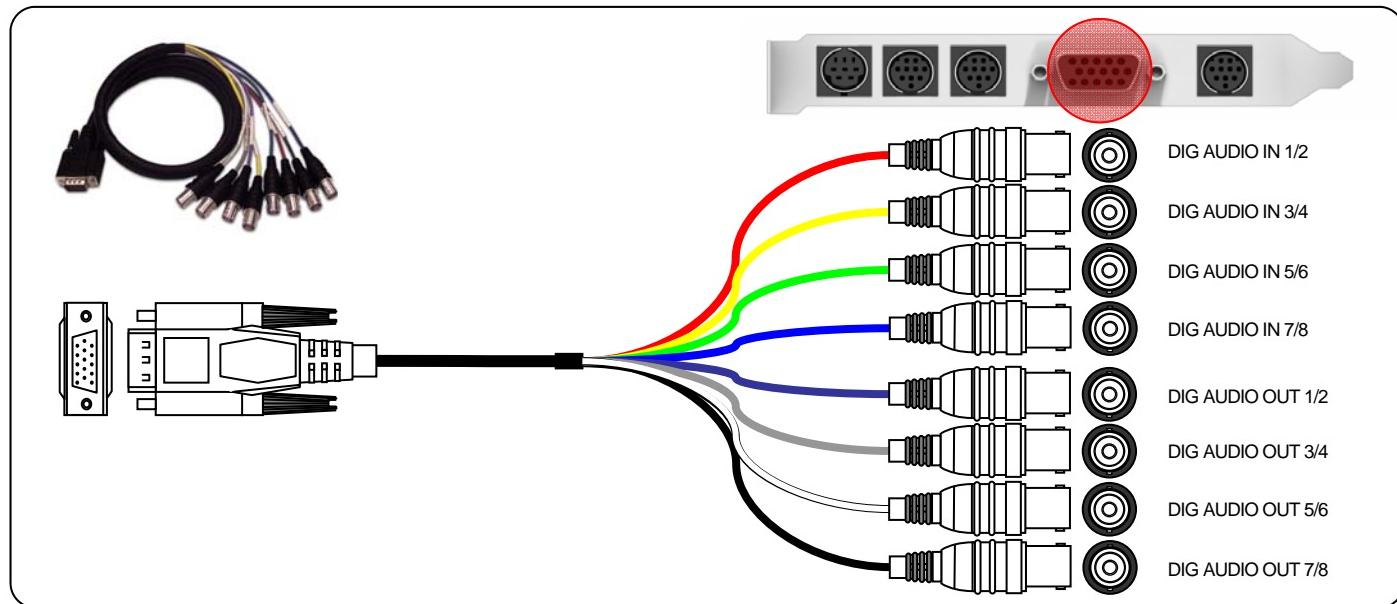
The analog video cable can support a range of input and output combinations. Combined with the SDI I/O cables the SD| Greed provides effective broadcast quality conversion between digital to analog and analog to digital. SD| Greed's analog video allows you to mix output combinations with SDI, Component, S Video, or, SDI, Component, S Video and composite, etc.

Digital to analog and analog to digital conversion is done at 12 bits maintaining the highest quality signal accuracy and during the conversion process.

Label	Cable Color	Analog Video Connection Options					
		Output			Input		
		Component RGB	Component YUV	Composite SVIDEO	Component RGB	Component YUV	Composite & SVIDEO
AVID 1	Red	G	Y	CVBS	-	-	-
AVID 2	Yellow	B	U	Y	-	-	-
AVID 3	Green	R	V	C	-	-	-
AVID 4	Blue	G	Y	CVBS	-	Y	CVBS
AVID 5	Grey	B	U	Y	-	U	Y
AVID 6	White	R	V	C	-	V	C

RGB/YUV = Component, YC = Composite, CVBS = S Video

Card	Supported Cables
SD Greed	Analog I/O
SD Focus	Analog Output only
SD Fidelity	Analog I/O
SD Single link Pro	Analog I/O

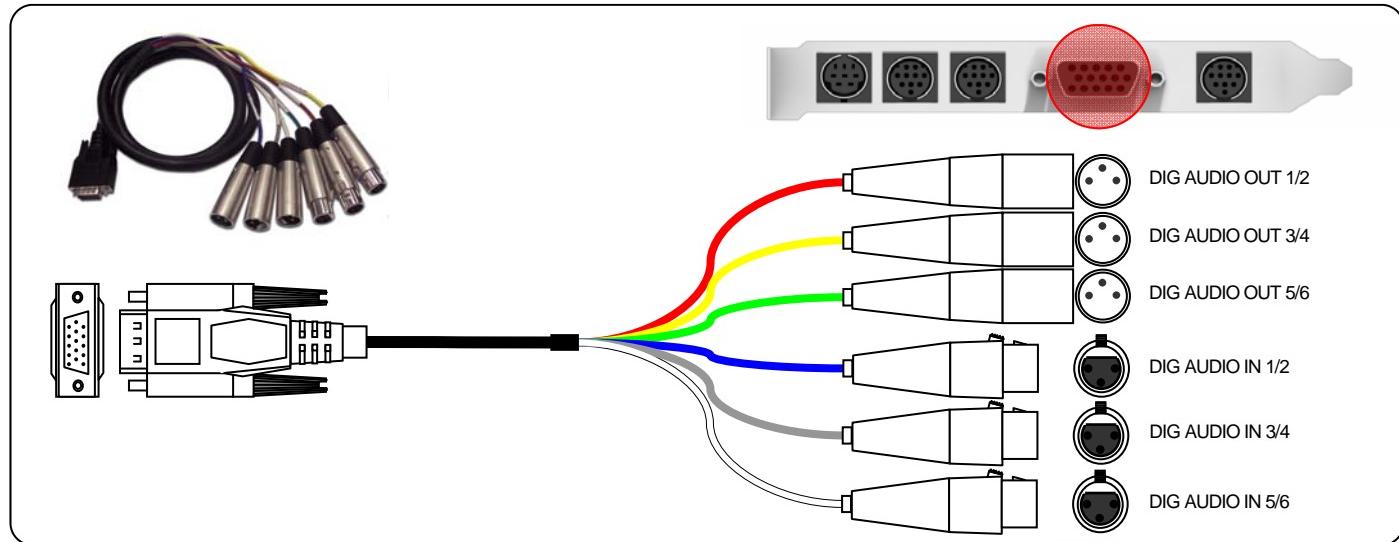
**Digital Audio Option 1 - S/P DIF BNC 8 Channels I/O, Unbalanced**

SD| Greed, Focus and Fidelity provide 8 BNC connectors. Each BNC connector supports a pair of pair channels. There are 4 pairs for input and 4 pairs for output.

Note: These BNC connections produce digital signals and can not be used with analog speakers.

Type	Supported Mode	Label
8 Channels BNC	S/P DIF Unbalanced	DIG AUDIO IN/OUT 1/2, 3/4, 5/6, 7/8

Digital Audio option 1 is supported by all cards

**Digital Audio Option 2 - AES/EBU XLR 6 Channels I/O, Balanced**

The SD product range provides 6 XLR connectors, supporting AES/EBU balanced digital audio. 3 female XLR pairs provides 6 channels of input and 3 male XLR pairs provides 6 channels of output.

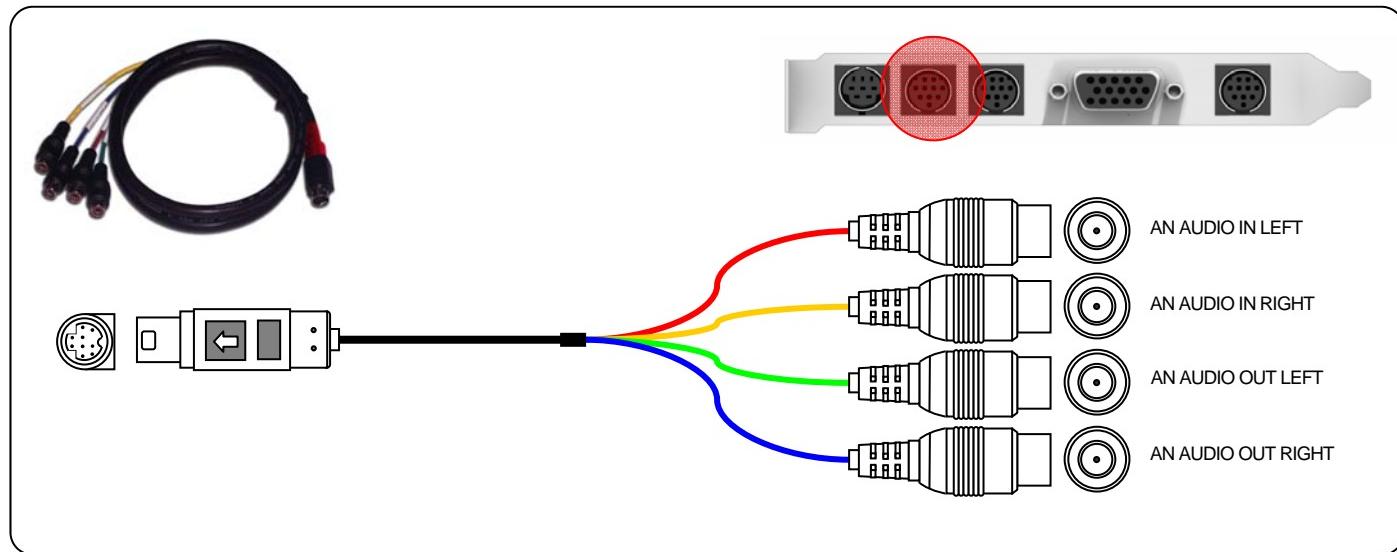
Note: These XLR connections produce digital signals and can not be used with analog speakers

Type	Supported Mode	Label
6 Channels XLR, Balanced	AES/EBU	DIG AUDIO IN/OUT 1/2, 3/4, 5/6

Digital Audio option 2 is supported by all cards



Analog Audio Option 1 - RCA Dual channel, Unbalanced



SD|Greed and Fidelity provide 2 RCA, unbalanced analog input and 2 RCA unbalanced analog output connectors, one for each channel.

The connectors are RCA-style ("phono") jacks which allow you to connect into a range of analog monitoring devices such as phono jack speakers and headphones for inexpensive monitoring of audio.

The Inputs may be connected to domestic Hi Fi components such as CD Players etc

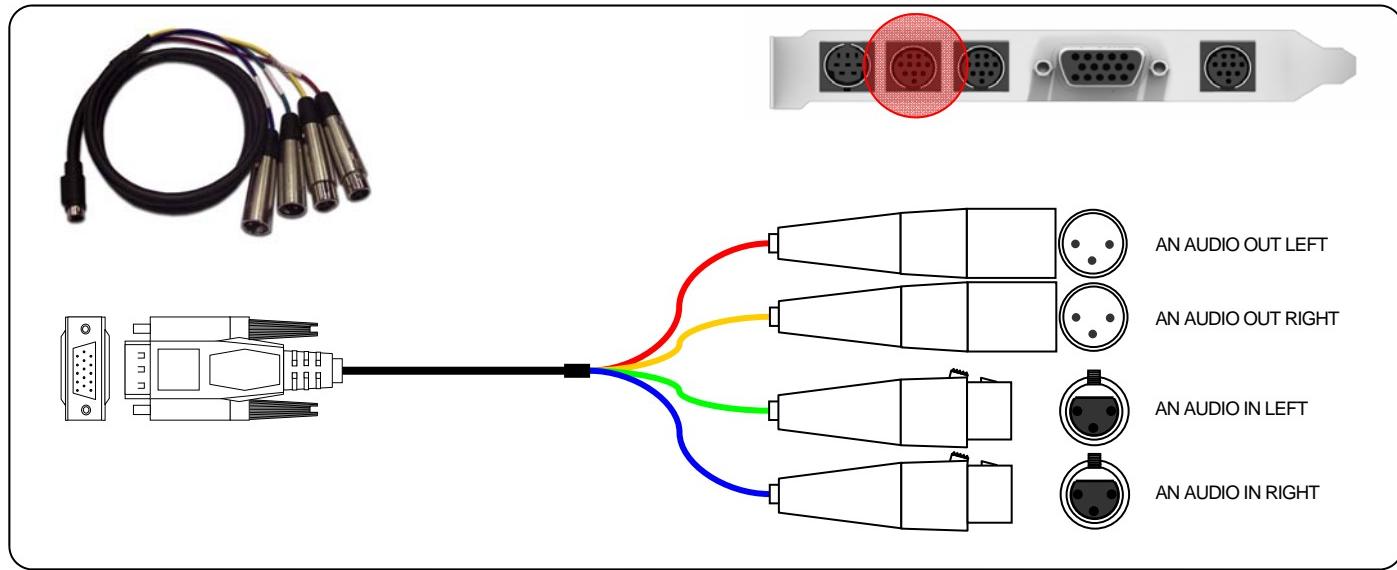
SD| Focus support Analog video output only

Type	Supported Mode	Label
Analog, unbalanced	RCA	AN Audio IN/OUT, LEFT/RIGHT

Card	Supported Cables
SD Greed	Analog Audio I/O
SD Focus	Analog Audio Output
SD Fidelity	Analog Audio I/O
SD Single link Pro	Not Supported
SD Prime	Not Supported



Analog Audio Option 2 - XLR Dual channel, Balanced



SD| Greed and SD| Fidelity provides 2 balanced analog input and 2 balanced analog output connectors, one for each channel.

The connectors are XLR male for input and female for output. Allows you to plug into a range of professional analog monitoring, recording, processing, and transmission equipment that support the standard XLR connections

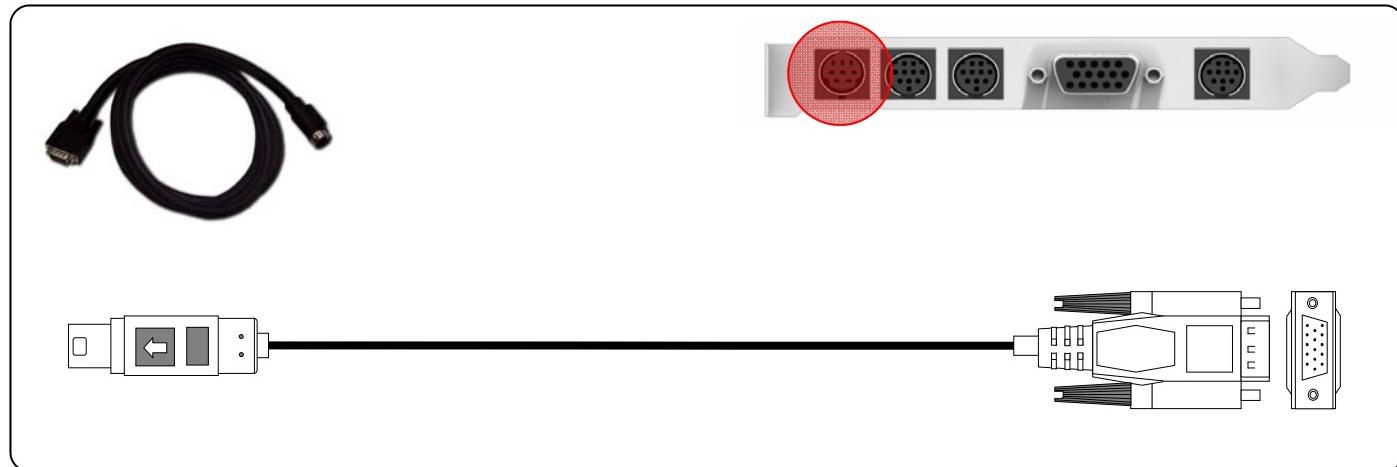
SD| Focus supports Analog audio output only

Type	Supported Mode	Label
Analog , balanced	XLR	AN Audio IN/OUT, LEFT/RIGHT

Card	Supported Cables
SD Greed	Analog Audio I/O
SD Focus	Analog Audio Output
SD Fidelity	Analog Audio I/O
SD Single link Pro	Not Supported
SD Prime	Not Supported



Deck Control



A Male DB8 connector provides connection between the SD| Greed and the SD| Prime card and decks, DDRS, cameras and other supported devices using RS422 SMPTE (Sony) protocol.

The SD| Greed also supports a further 3 internal connectors for RS - 422 control that are available for OEM configurations only.

The DB8 connector is wired to the Apple standard.

All four serial ports may be either master or slave connection under software control.

Note: Adobe Premier Pro and Symmetry do not support the Deck control port on the Bluefish444 cards. Use the systems COM port

Card	Supported Cables
SD Greed	Supported (Not supported by Premiere Pro and Symmetry, uses system COM ports)
SD Focus	Not Supported
SD Fidelity	Not Supported
SD Single link Pro	Not Supported
SD Prime	Supported (Not supported by Premiere Pro and Symmetry, uses system COM ports)



Windows XP Installation

Installation Check List.

Make sure you have the following installed prior to installing your SD| Greed, SD| Fidelity and SD| Focus card.

Requirements.

Item	Minimum
Operating System	Windows XP sp2 with Updates
QuickTime	QuickTime 7.1.5
Directx	DirectX 9c
Editing/Production Software Suite	Adobe Premiere Pro 2.0 (With latest updates March 21 st) After Effects 7.0.2 Adobe Photoshop CS 2 Other Supported 3 rd party software
System	XW 8200, 8400, 9300, Super micro, Intel Motherboard based system, 2 GB RAM or more for compositing application (See hardware guide for lastest supported card type at; http://www.blufish444.com/support/compatibility/hardware/) Rage N Code Minimum Dual core CPU 2.4 GHz and above
Graphics	DirectX 9 hardware capable card with 128 MB RAM of more ATI catalyst version 7.2 ATI Fire GL version 8.323.1 NVIDIA version QuadroFX & Geforce 91.36
Disk Storage	2 SCSI, 2 SAS or 4 SATA Hard Drives RAID 0

Installation Steps

- Prepare your system.
- Install 3rd party applications.
- Install QuickTime version 7.1.5 or above
- Installing the Bluefish444 hardware.
- Connecting to the outside world
- Driver Installation
- 3rd Party Software Setup
 - Adobe Premiere Pro 2
 - After Effects
 - Audition
 - Combustion



Prepare your system.

Ensure you have installed the latest OS versions, driver and BIOS updates for your system.
Please refer to the certified hardware guide section or the readme document for more information.
<http://www.bluefish444.com/support/compatibility/hardware/>

Install 3rd party applications.

It is recommended to pre install supported applications before running the Bluefish444 installer.
IF you install 3rd party applications after running the Bluefish444 Max OS installer. You will be required to re install .
This will install plug ins and presets for the 3rd party applications

Install QuickTime version 7.1.5 or above

Download and install the latest QuickTime installer available at the following site.
<http://www.apple.com/quicktime/>

MPEG 2 Support for Symmetry and Premiere Pro 2.0

Install Rage encode Hardware and Supported software for this retail installer.
To have MPEG 2 support option in Symmetry you must install the Aspex Accelera retail installer before the Bluefish444 retail installer.
IF version 2 and above is installed you will require activation keys to enable encoding to MPEG 2 and \or H264
RAGE N|Code ships with MEPG 2 encoding capabilities, H264 encoding is

If this Step is not done you will not have MPEG 2 as a file format option.

Note The RAGE N|Code will accelerate encoding via Abobe media encoder only and not provide Real time encode ingest during capture.



Installing the Bluefish444 Hardware

Bluefish444 provides detailed information on tested and certified hardware configurations for a range of common motherboards and computer systems.

Please refer to this free informative section available on our web site at the following Link; <http://www.blufish444.com/support/compatibility/hardware/>

SD| Greed PCI 32 bit card was used in this example

- Place your system in an easily accessible place that has sufficient lighting. It is not recommended to insert the card in an awkward position that will increase the chances of a poorly contacted or incorrectly inserted card.
- Ensure your hands are clean and free of dirt and fluid.
- Remove your system's protective case.
- Make sure you are earthed and discharge any static build up before handling the Bluefish444. With your hand, touch the metal frame of the PC case to discharge any static electricity you may have built up.
- Remove the power cable from your system.
- Identify a free PCI slot as outlined in the hardware configuration for your Bluefish444 certified motherboard or system.
- Remove the PCI slot aperture for the corresponding slot the SD| Greed card will be inserted into.

For more detailed information on correct slots for your motherboard or system type, please refer to the Bluefish systems and hardware support section at; <http://www.blufish444.com/support/compatibility/hardware/>

NOTE; Certain slots on motherboards share the same bus. Motherboards supporting PCI-X 133 MHz slots usually are on a separate bus and will not be affected by inserting the SD| Greed card.

For a G5 or Intel/AMD motherboards, you should always have the controller card and the SD| Greed on a separate bus.

For systems with an onboard SCSI controller such as the HP 8200/9300, the 100 MHz bus is shared with the onboard SCSI, so it is wise to place the SD| Greed in the PCI - X 133 MHz slot (Slot 4 on the G5), so as to not affect the performance of the SCSI or FC controller card.

Card Installation

Remove the Bluefish card from the antistatic bag..

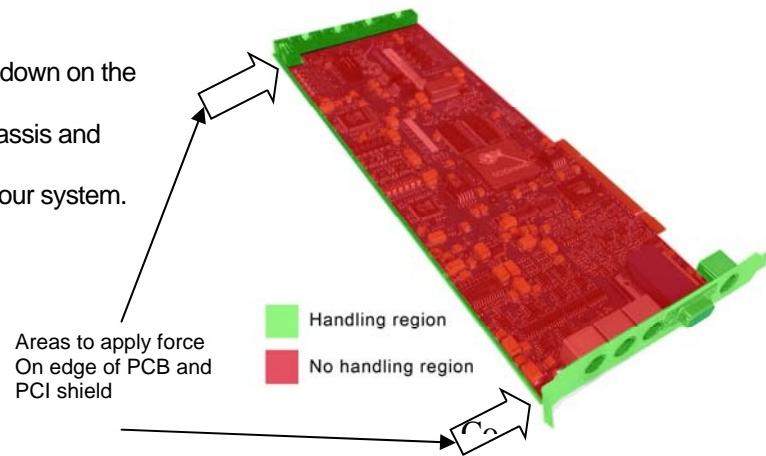
Hold the card by the PCI shield top and at the top of the PCB at the opposite end of the PCI shield. This will reduce any chance of any damage of the bluefish444 card circuitry.

Do not touch the components on the PCB, do not touch the PCI slot mating edge.
(See handling region diagram below).

Insert the card into the correctly chosen slot by firmly pressing down on the metal PCI shield and the edge of the PCB.

Secure the card with a screw or PCI clip, depending on the chassis and computer system you are using.

Replace the system chassis cover and connect the power to your system.





Connecting to the outside world

The Bluefish SD product range are an extremely versatile Video/Audio I/O card that can connect to a range of devices simultaneously. There will be a range of connection workflows that can not be covered by this manual instead we will focus on two typical connection work flows commonly used in the professional broadcast industry.

Taking advantage of video cards with Analog video and audio I/O, provides a powerful analog to digital converter in one PCI card, this removes the need of expensive external devices for video and/or audio conversion.





Typical Connection Workflow 1

The following example is a typical workflow you might use if your source is SDI but you have analog monitoring for video and audio and two channels of audio are required.

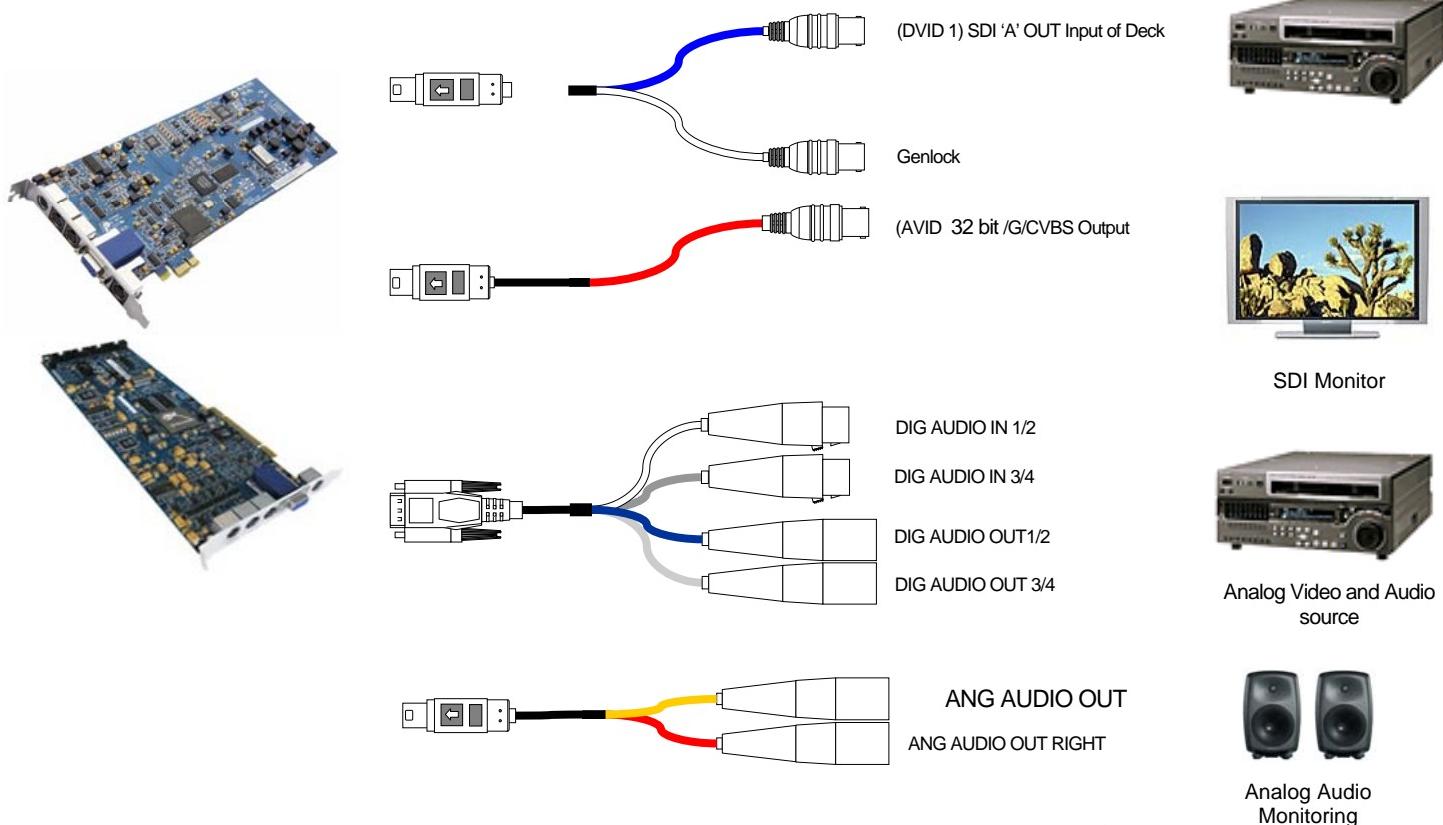
- SDI video I/O
- Digital XLR audio I/O 4 Channels of Audio
- Analog video and audio monitoring

Your source and master is Digital SDI for video and Digital Audio by AES/EBU XLR.

Your monitoring is Analog component and analog audio.

If your deck supports embedded audio you could I/O the audio via the SDI and monitor the 4 channels via XLR or S/P DIF.

Cable Connection Guide



Feature application Settings

- Digital audio routing channels 1 & 2 to Analog left and right
- Audio Input set to AES
- Analog Video set to Component



Typical Connection Workflow 2

The following example is a typical workflow you might use if you wish to edit and monitor with 6 channels of audio for surround sound 5.1 editing and ingest Digital Video and Audio via SDI

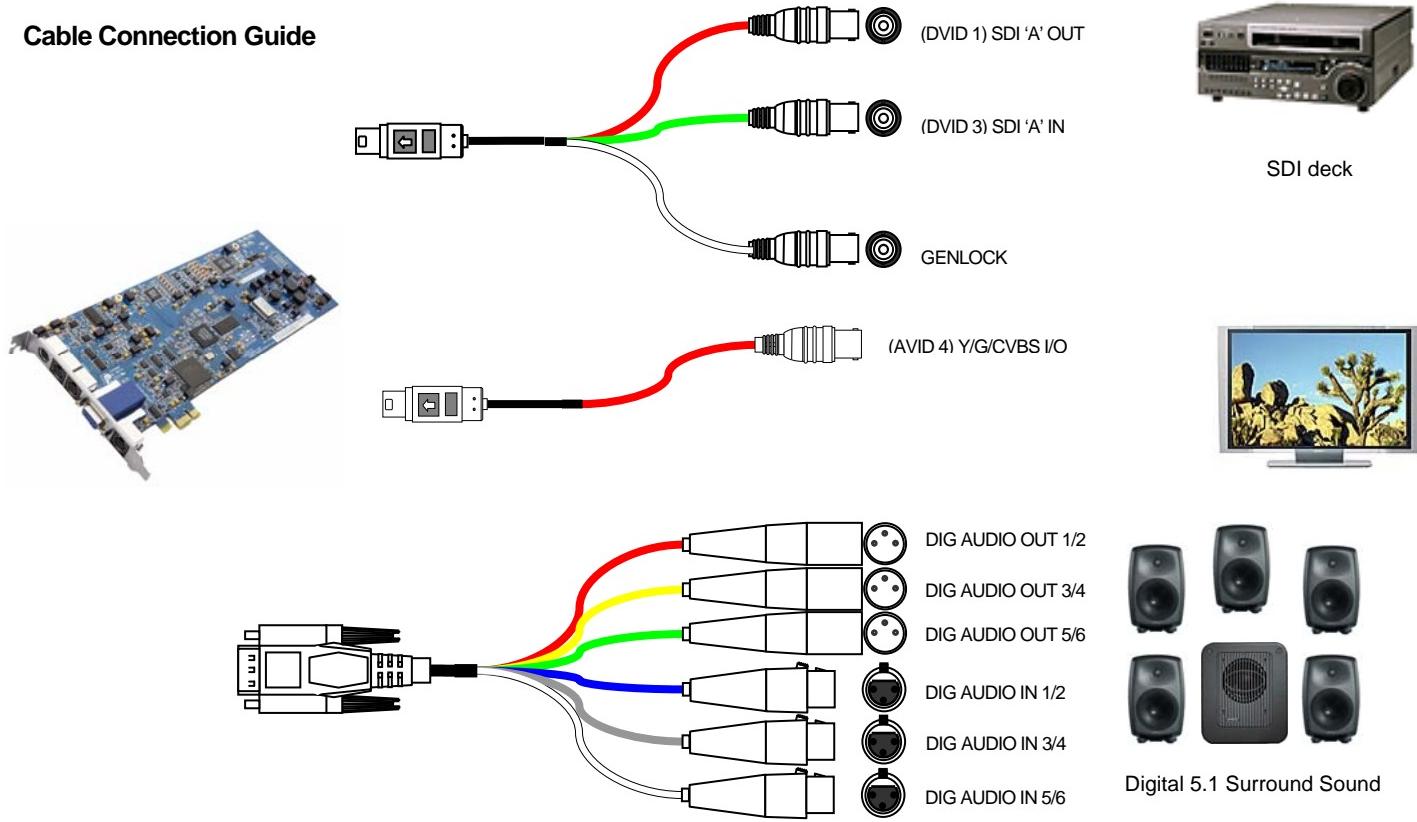
- SDI video I/O with 8 channels of embedded audio
- Digital XLR audio I/O 6 Channels of Audio
- Analog video monitoring - component
- Genlock

Your source and master is Digital SDI for video and Digital Audio via AES/EBU XLR .

Your monitoring is Analog component video and analog audio

If your deck supports embedded audio you could I/O the audio via the SDI and monitor the 4 channels via XLR or S/P DIF.

Cable Connection Guide



Feature application Settings

- Audio Input set to SDI
- Analog Video set to Component



Typical Connection Workflow 3

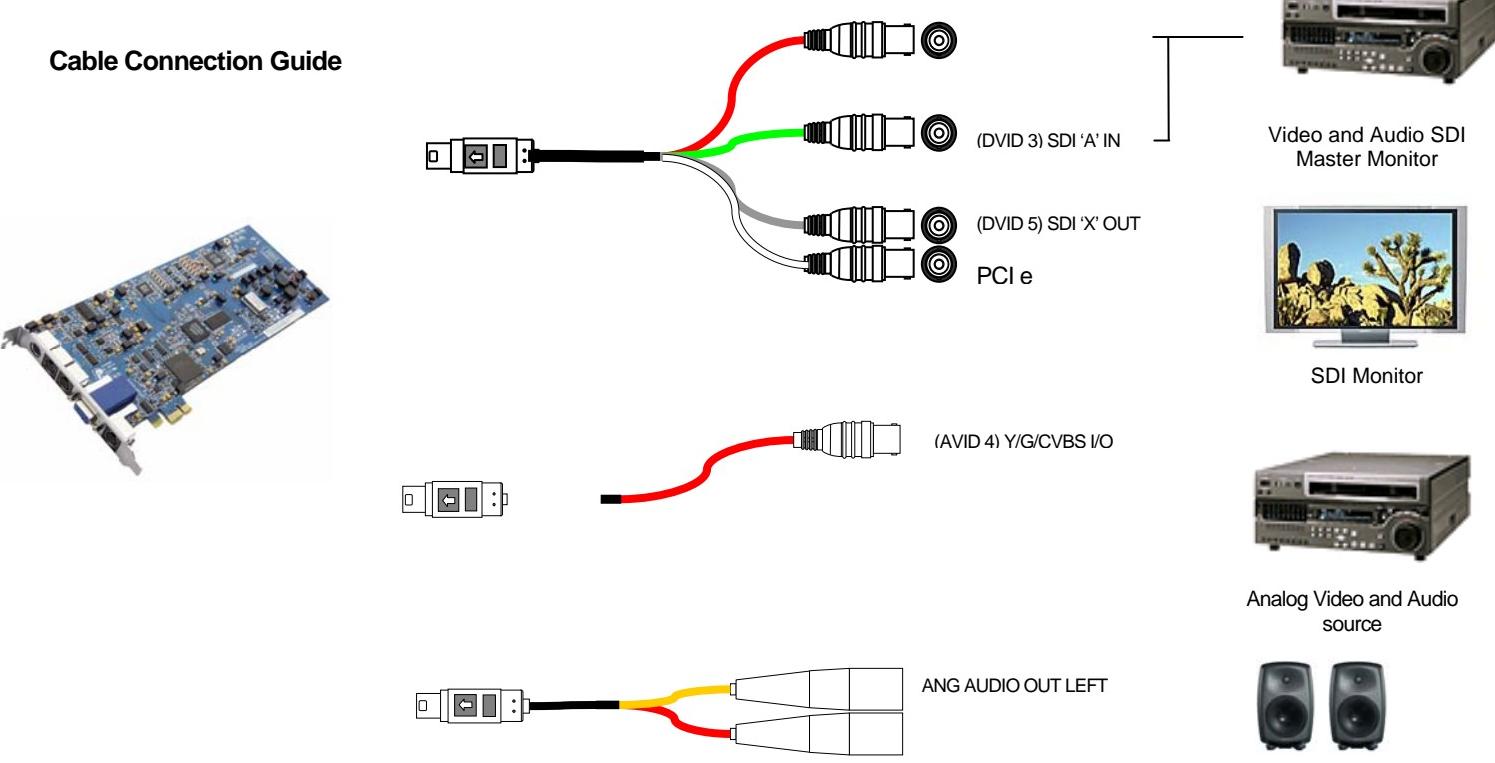
The following example is a typical workflow you might use if you wish to ingest Analog Audio and Video and master the SDI video and audio without the use of external 3rd party converters.

- SDI video Output with 8 channels of embedded audio
- Analog Audio XLR input two channels
- Analog video Input Component
- Genlock

Your source is an analog deck providing video and Digital Audio via XLR .

Your master is a Digital SDI deck.

Cable Connection Guide



Feature application Settings

- Audio Input set to Analog
- Analog Video set to Component

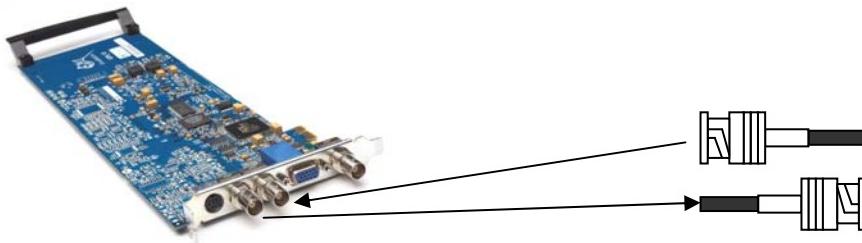


Typical Connection Workflow 4

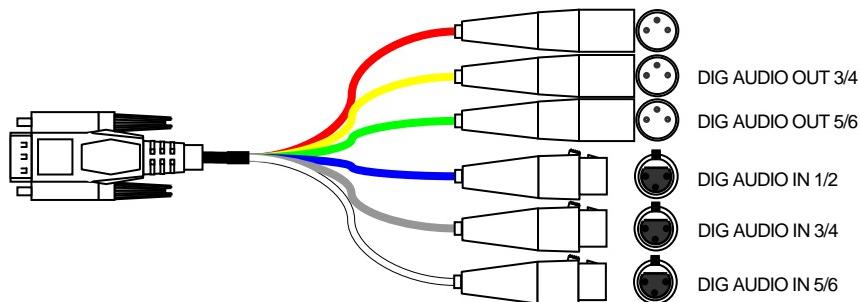
The following example is a typical workflow you might use if you wish to ingest Digital Audio and Video

- SDI video Input and Output with 8 channels of embedded audio
- Genlock

Cable Connection Guide



SDI Monitor
SDI Source and Master Video and Audio



Digital 5.1 Surround Sound



Driver Installation

The SD Product range is a multiplatform video card supporting the Windows, Apple Mac OS and Linux operating systems. This manual will cover the installation procedures for the Windows operating system only.

For Linux Support please register as an OEM developer on the bluefish444 website.

<http://www.bluefish444.com/support/oem/default.asp>

Apple Mac OS Installation

For installation on the Apple MAX OS platform please refer to the SD MacOS installation manual.

SDK Installation

Bluefish provides a software developers kit for the Windows and Linux platforms. Information on obtaining the SDK is available online at the Bluefish website at;

<http://www.bluefish444.com/support/OEM./>

Linux support and drivers is via OEM solutions only and is available via application.

Do not use the SDK installer for retail installations or for public distribution. You must use the Bluefish retail installer.

If your solution provider recommends using the Bluefish444 retail installer ensure that you know what the SDK driver version the supported application was developed with .

In each bluefish444 retail installer we list the SDK\Driver version, this needs to match.

In some circumstances if an older SDK version was used the new retail driver SDK version is backwards compatible. This is not guaranteed..

Windows Installation

Depending if you have had previous installations of Bluefish cards or this is a new system installation will determine the type of installation procedure.

Key points to remember when to run the Bluefish444 installer;

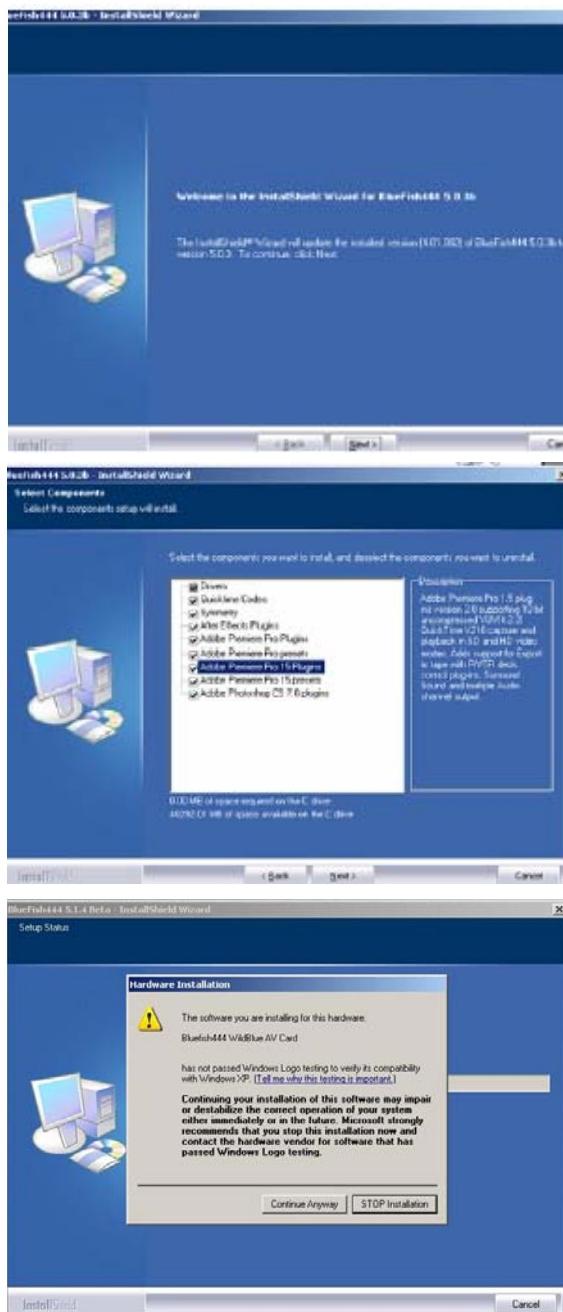
- You must have Administrator privileges.
- You must install the Bluefish444 installer for each user of the same workstation.
- Always uninstall any previous installer before running the installation program.
- Always shut down your system, after installing the drivers, do not do a soft restart.
- Always run the installer if you change cards, even if it is the same model, as there maybe different firmware versions that are not compatible with the installer version you intend to use.
- Always read the “README_vXXX.pdf” (vXXX refers to the version number e.g. 5.0.9) that is shipped with your Bluefish installer. It will provide up to date, critical information on the installer version you are using.



New Installations

The following steps are for new installations of your Bluefish444

1. With the Bluefish444card installed, turn on your system.
2. When Windows loads, you may be presented with "New Hardware Found" Dialog box.
3. Close the Dialog box.
4. Run the Bluefish444 installer vXXX
5. Select next and say yes to all prompts to continue.
6. Restart your system,

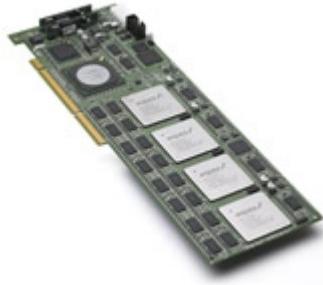




You may under certain circumstances see another “new hardware found” dialog box appear after you restart your computer system because the firmware introduces a new Rev ID, and so to the operating system it is a new device.

1. In the “found new hardware Wizard” dialog box select “install the software automatically” option.
2. Select next.
3. Select “Continue Anyway
4. Select finish
5. Launch Symmetry and the Bluefish444 feature application to test your configuration.

Rage N|Code Installations



If you have installed the Rage N|Code acceleration card for real time HD encoding to MPEG 2 you will be required to install the Aspex Accelera Installer prior to the Bluefish444 installer.

The Bluefish444 installer requires a pre installed Accelera card and driver to activate the MPEG 2 file format option.

For new installations.

1. Install the Aspex and Bluefish444 card and restart your system
2. Close all “new hardware found” windows
3. Install the Rage Aspect Accelera installer for the RAGE N|Ccode and follow all on board prompts.
4. Install the Bluefish444 installer.
5. Run Symmetry and select file format and confirm the MPEG 2 is a file format options

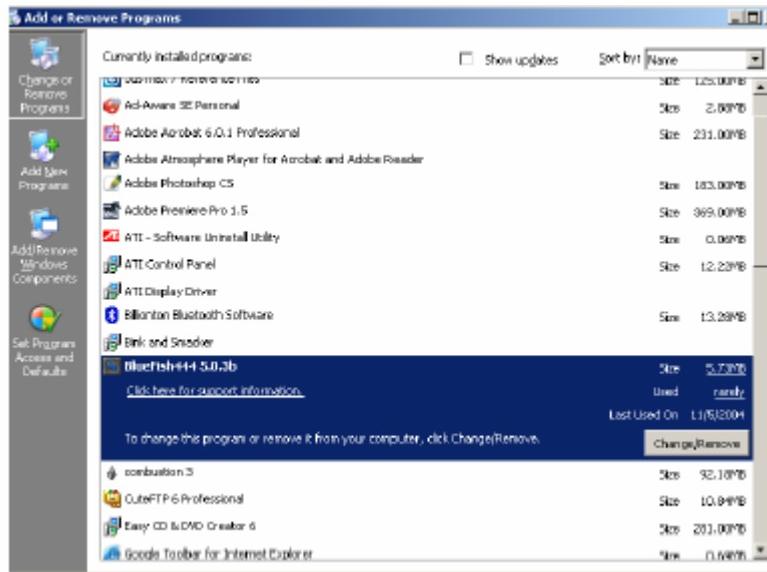
Installing the Rage N|code after Bluefish444 installation.

1. Uninstall previous Bluefish444 installers
2. Install the Rage Aspect Accelera installer for the RAGE N|Ccode and follow all on board prompts.
3. Re Install the Bluefish444 installer.
4. Run Symmetry and select file format and confirm the MPEG 2 is a file format options



Uninstall Previous Bluefish444 Installers.

1. Make sure you have closed all applications,
2. In the Windows Control panel, go to Add or Remove Programs,
3. Select the Installed Bluefish444 installer and select Change/Remove



4. Uninstall all Bluefish444 installers in the Add remove programs dialog box, e.g.;
 - a. Bluefish444 Adobe Installer,
 - b. Bluefish444 installer 2,
 - c. Bluefish444 installer 3.1,
 - d. Bluefish444 installer 4.1.2,
 - e. Bluefish444 installer 5.XX
 - f. Restart your system

NOTE; The Bluefish Windows retail and SDK installer supports a range of Bluefish444 video cards, insure the installer you are using has support for your Bluefish444 SD video card. Contact the application manufacture or your reseller for further information.



Installing From Previous Installations

1. Close all applications.
2. Uninstall all previous Bluefish4444 Installers.
3. In the Windows Control panel, go to Add or Remove Programs,
4. Uninstall all Bluefish444 installers in the Add remove programs dialog box e.g.; Bluefish444 installer 5.1.9.
5. Follow all on bard prompts.
6. Restart your system.
7. Run the Bluefish444 installer v5.X.X
8. Say yes to all prompts to continue.
9. Select yes to shut down the system if required.
10. If your system does not shut down automatically;
11. Go to "Start" menu button and select "Turn Off Computer".
12. Select "**Turn Off**" to shut down your system.
13. Restart your system.
14. You may under certain circumstances see another "new hardware found" dialog box, this is because the firmware introduces a new Rev ID, and so to the operating system it is a new device.
15. In the "found new hardware Wizard" dialog box select "install the software automatically" option.
16. Select next.
17. Select "Continue Anyway"
18. Select finish.
19. Launch Symmetry and the Bluefish444 feature application to test your configuration.



Manual Removal of Bluefish444 files and Drivers

Step 1 - Uninstall Bluefish444 Installers.

1. Make sure you have closed all applications,
2. In the Windows Control panel, go to Add or Remove Programs,
3. Uninstall all Bluefish444 installers in the Add remove programs dialog box

Step 2 - Remove Bluefish444 Drivers and System files.

Note, you will be deleting files that are in system folders, ensure you do not delete incorrect files as this may affect the operation of your system.

You will also need to turn on “show system files and folders” in Tools-> Folder Options -> View

1. In “Windows Explorer” select tools and folder option in the menu bar
2. Select the “View” tab
3. In advance settings scroll to “Hidden files and folders”
4. select “Show hidden files and folders”
5. Go to the C:\Windows\inf folder and open it
6. Select the Search Utility and select the “Files or Folders” option.
7. In the “What do you want to search for” option box select “A word or phrase in the file”
8. Type in “Bluefish”
9. A file name beginning with OEMX.inf will be presented, X denotes a numeric value e.g. OEM11.inf.
10. Delete the file.
11. Type in and search for the following files and delete all instances of them.
12. In C:\Program Files delete the Bluefish444 folder and all the contents,
13. In C:\WINDOWS\system32 folder delete the following files:
 - a. BlueSetupApi.dll
 - b. BlueVelvet3.dll
 - c. BlueVelvet3_d.dll
 - d. BlueVelvet.dll
 - e. BlueVelvet_d.dll
 - f. BlueVelvetCom.dll
 - g. Puffer.dll
 - h. BXQTPremiere.dll
 - i. FileInterChangeDll3.dll

Note not all these files may or may not be present due to uninstall process in step 1,

In C:\Program Files\BlueFish444\Driver, delete the following files if present;

- BlueDriver.sys
- BlueSD.sys
- BlueGM.sys
- BlueHD.sys
- BlueBAG_X.rbf files, X denotes a numeric value e.g. BlueBAG_147.rbf

Step 3 - Delete Plug-in's.

In the Start menu, select the Search Utility and select the “Files or Folders” option.

In the “What do you want to search for” option box select “ All Files and Folders”.

Type in and search for the following files and delete all instances of them.

For After Effects



- Bluefish444IO.aex
- bluefishhemp.aex
- bluefishio.aex

For Adobe Premiere Pro 1.0/1.5/2.0

- bluefish444asio.dll
- cm-Bluefish-Compiler.prm
- im-Bluefish-Import.prm
- pm-Bluefish-Playback.prm
- rm-Bluefish-Record.prm

Step 4 - Uninstall Drivers via Device Manager.

1. In the “Device Manager” (Device Manager can be opened by right clicking the “My Computer” Icon in the desktop and select “manage”. This will open the Computer management window. Select the “Device Manager”.)
2. In “Sound, Video and Game Controllers” right click the “Bluefish444 “X” device” and select “Uninstall”. (X Denotes Bluefish444 product type)
3. Follow onboard prompts.
4. Restart your system.

Step 5 – Installation.

1. Turn on your system with the SD|Greed video card installed int eh correct slot.
2. When Windows loads, you may be presented with “New Hardware Found” Dialog box.
3. Close the Dialog box.
4. Run the Bluefish444 installer v5.X.X
5. Say yes to all prompts to continue..
6. Select yes to shut down the system if required.
7. If your system does not shut down automatically;
8. Go to “Start” menu button and select “Turn Off Computer”.
9. Select “**Turn Off**” to shut down your system.
10. Restart your system
11. You may under certain circumstances see another “new hardware found” dialog box, this is because the firmware introduces a new Rev ID, and so to the operating system it is a new device.
12. In the “found new hardware Wizard” dialog box select “install the software automatically” option.
13. Select next.
14. Select “Continue Anyway
15. Select finish
16. Launch Symmetry and the Bluefish444 feature application to test your configuration.



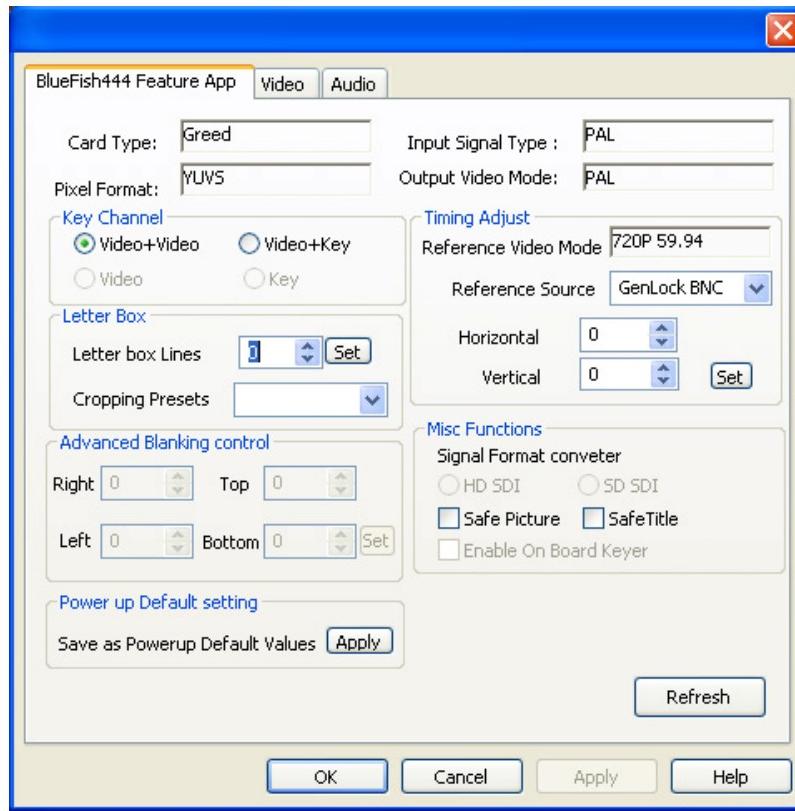
Feature Application

About the Bluefish444 Feature Application.

The Bluefish444 feature application allows you to control and monitor your Bluefish444 Video I/O card. It can be used as a diagnostic tool and provides an interface to enable or disable extended features independently of your current software application. The Bluefish444 feature app provides at a glance a range of information about what video mode and pixel format your card is currently operating in.

Feature App Main Control Interface.

The Bluefish444 feature application interface supports all of the Bluefish444 product range. Depending on the card type you have installed, the Bluefish444 feature app will make available certain features. For example the SD|Greed SDI/analog video I/O card supports both dual link SDI I/O as well as Analog I/O. When the feature application is launched you will be presented with two section tabs, the main feature app section and an extra Analog BNC property tab Bluefish444 Feature App section.



Card Type

This tells you what card you have installed and is currently active for the Feature Application.

If you have more than one Bluefish444 card installed the feature application will ask you which card you wish to attach to each time the Feature App is launched.



Pixel Format.

Indicates what pixel format, the card is set to. Pixel formats are also referred to as the frame buffer mode, engine or memory format the hardware is currently operating in.

Some of the pixel formats supported by the SD|Greed are;

Pixel Format	Color Space	Link	Bit Depth
ARGB	BGR+A	4:4:4:4	8 bit
ARGB_PC	RGB+A	4:4:4:4	8 bit
BV8	YUV	4:2:2	8 bit
BV10	YUV	4:2:2	10 bit
CINEON/DPX	RGB	4:4:4	10 bit
V210	YUV	4:2:2	10 bit
2VUY	YUV	4:2:2	8 bit
YUVA	YUV	4:2:2	8 bit

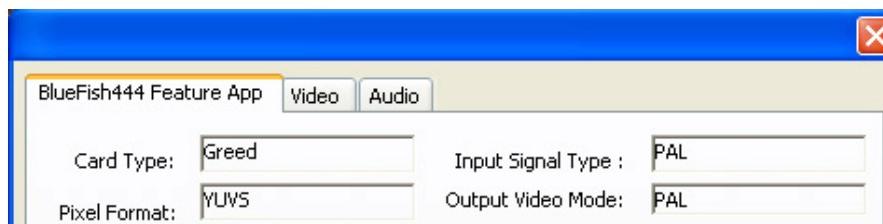
Depending on the application used will determine what memory format the SD|Greed is currently in at the time the feature app was loaded. You can update the information by clicking refresh. Final Cut Pro and Adobe Premiere PRO for example use the v210, a 10 bit YUV memory format, some applications can also use multiple memory formats.

Input Signal Type.

Indicates the current signal the card is receiving on the SD Input source from the deck or other signal source.

Output Video Mode.

Indicates the current video mode the SD|Greed is in. The video mode can not be change in the feature application, it is controlled by the Application (e.g. Adobe Premiere Pro or Combustion, etc)



Key Channel.

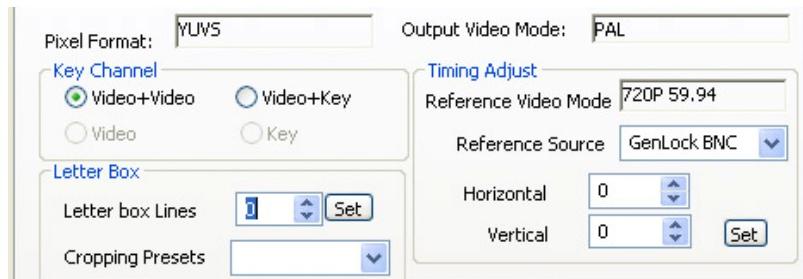
This section gives you direct control of the output signal format from your Bluefish444 product. Altering these settings will override what the current application has set the card to. In most cases you will not need to use these features as the application will enable or disable them.

Video + Video, Video + Key;

Dual link cards allow you to switch the Link B BNC between KEY or VIDEO

Video or Key;

Allows you to switch the output of our single link cards between KEY and VIDEO KEY is the alpha channel output of a Video or Frame. The Bluefish444 dual link cards have the ability to extract the alpha channel and output to a specific BNC. Video and KEY is normally used in live broadcast environments such as virtual sets.



Genlock/Timing Adjust.

Reference Video Mode;

Displays the input type that the SDI Greed is detecting on the reference input.

Reference Video Source;

This allows you to select the reference source as either

- Genlock BNC
- SDI link A
- SDI link B

Horizontal;

Adjusts the relative horizontal timing between the Genlock signal and the cards output signals

Vertical;

Adjusts the relative vertical timing between the Genlock signal and the cards output signals

Set;

Commits any changes made to the new default power up values

Miscellaneous Functions.

Signal format converter; (HD product range only);

The SD product range does not support HD to SD down conversion

Safe Picture;

Enable and disables the safe picture overlay on the SDI output.

Safe Title;

Enable and disables the safe title overlay on the SDI output.



The screenshot shows the 'Letter Box' configuration window. It includes fields for 'Letter box Lines' (set to 1), 'Horizontal' (0), 'Vertical' (0), 'Cropping Presets' (dropdown menu), 'Advanced Blanking control' (Right: 0, Top: 0, Left: 0, Bottom: 0), 'Misc Functions' (Signal Format converter: HD SDI, SD SDI, Safe Picture, SafeTitle, Enable On Board Keyer), and a 'Power up Default setting' section with 'Save as Powerup Default Values' and 'Apply' buttons. A 'Refresh' button is at the bottom right.

Enable Onboard Keyer;

The onboard keyer feature provides you with the ability to apply graphics and animation content over the incoming stream and out put the result in real time.

Perfect for real time overlay and logo branding for off the shelf applications.

Applications that can be used are Adobe After Effects, Discreet Combustion, VDS Twister, Photoshop CS/7.0, Eyeon Digital Fusion, Symmetry 2.2 and many more that support the following frame buffer mode, 8ARGB or 8BGRA

Symmetry version 2.2 will be supporting TARGA 32 bit sequences playback and capture and can effectively be used to playback clips that can be keyed with the SD| Greed video card. With Symmetry you can load a range of sequences with the play list feature and output animations and frames over your incoming video.

Symmetry version 2.2 supporting TARGA and play list will be available early 1st Quarter 2006 for free

Letter Box.

This section controls the letter box feature that Bluefish444 hardware supports. Letterbox blanks the top and bottom of the screen. This is used to create a 16.94:3 monitor

The screenshot shows the 'Letter Box' configuration window. It includes fields for 'Letter box Lines' (set to 1), 'Horizontal' (0), 'Vertical' (0), and a 'Cropping Presets' dropdown menu.

Letter box lines

Controls the amount of horizontal blanking lines at the top and bottom of the screen.

Set

Commits the changes to the Bluefish444 card

Cropping presets

(not selectable with SD products)

Contains a range of cropping presets such as 16:9, 4:3, 2.35:1, and custom

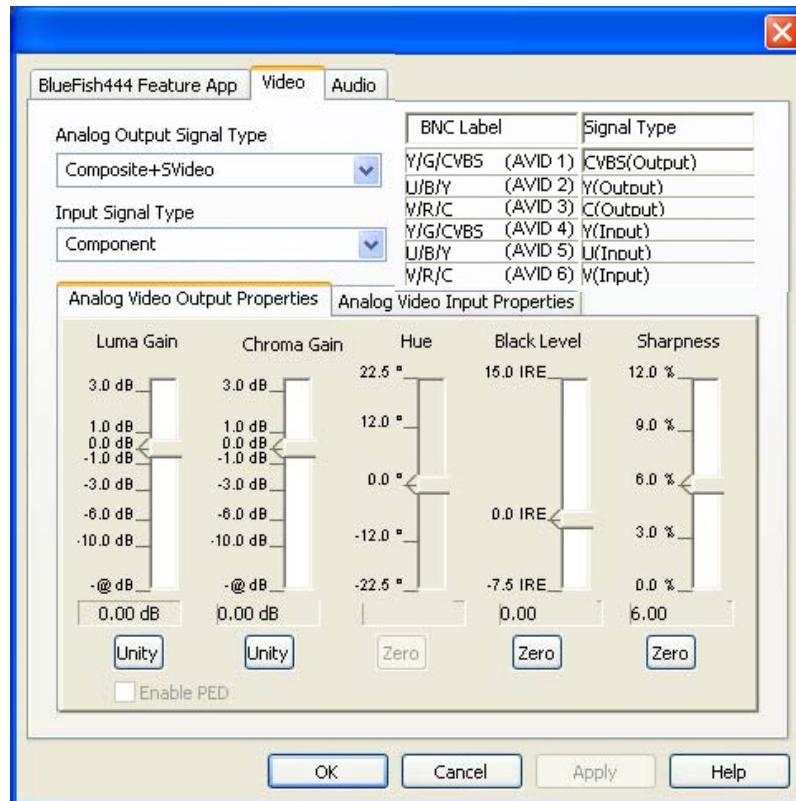
Custom - Activates the Advance Blanking control section



Video

The video features can be broken down into 4 sections;

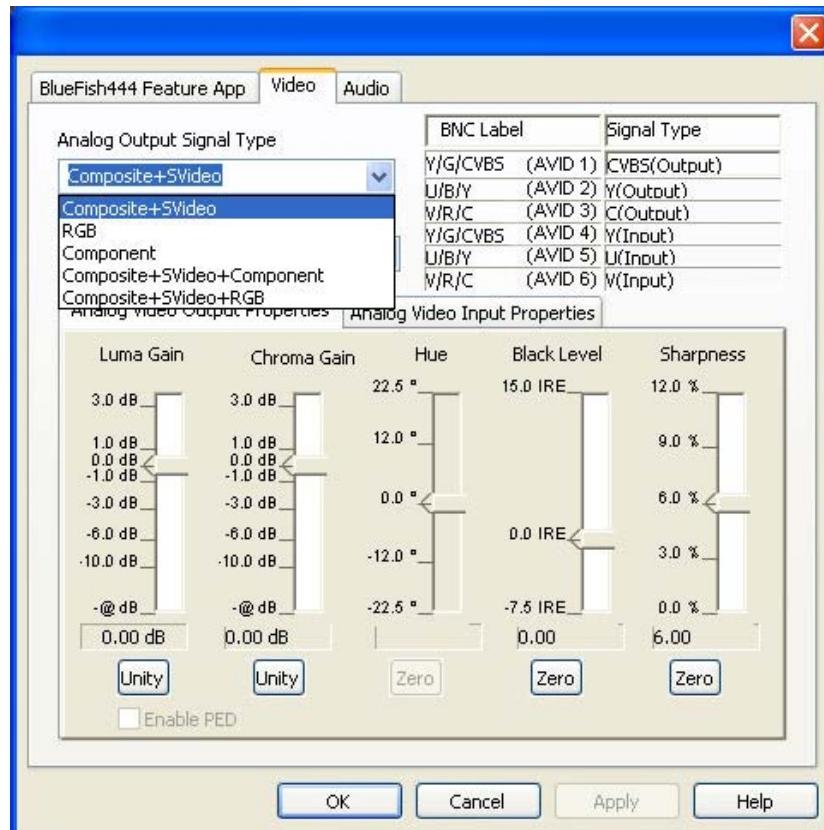
- Analog Output Signal Type
- Input Signal Type
- Analog Video Output Properties
- Analog Video Input Properties





Analog Output Signal Type.

The SD| Greed supports a range of output configurations consisting of a mixture of digital and analog I/O options. The SD| Greed's analog I/O cables have 6 connectors that can be configured between Composite, S Video, Component YUV, Component RGB input and output.



For a guide of the possible configurations supported by the SD|Greed please refer to the section “[Analog Configuration Guide](#)” .



Video Input Signal Type

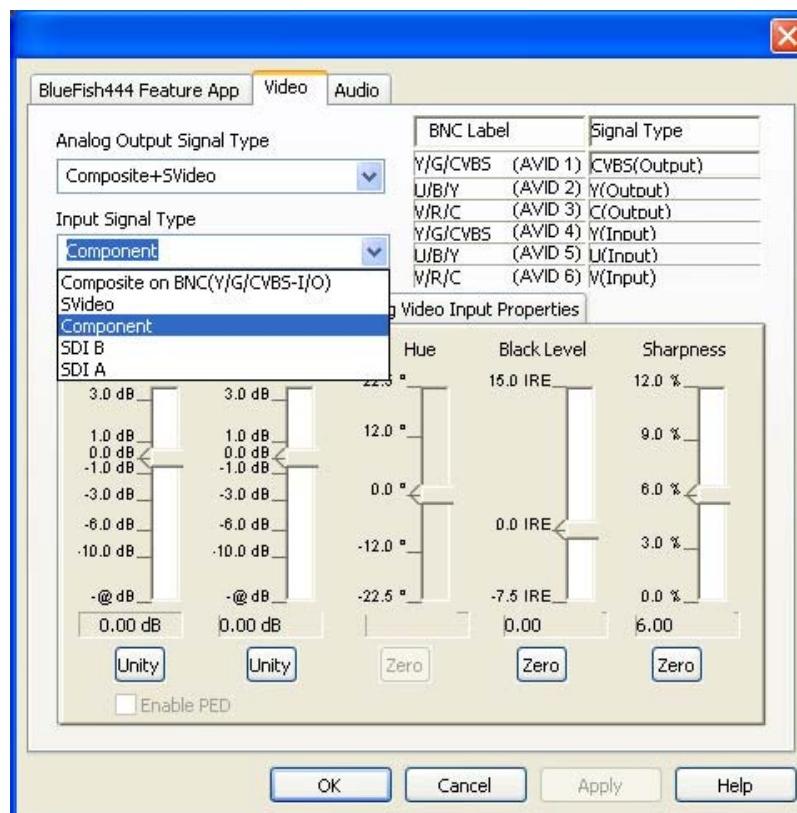
SD| Greed and SD| Fidelity supports both digital and analog input signal types such as;

- Analog
- Composite
- S-Video
- Component YUV

Digital

- SDI A
- SDI B (SDI B input is not supported in the SD| Fidelity and SD| Focus

Currently the SD| Greed supports either a Digital or analog input. In the next free driver release the SD| Greed will be able to have a combination of Digital and analog inputs and outputs as independent and simultaneous streams.



To select the input type you desire, select the Input Signal Type drop down box and select your input signal.



Analog Configuration Guide

The SD| Greed supports an array of configurations that can be selected by using the "Analog output signal type" selector and the "Input signal type" selector.

Numerous combinations are available. In general any of the analog video connectors that are not used as inputs can be used as outputs. Therefore the table below is arranged to show which output signal types will be available given the output signal type that will be used.

For a detailed Color Guide please refer to the SD| Greed Cable guide included in your SD| Greed box or refer to this manual "SD| Greed Cable Connection Guide".

Analog and Digital I/O Configurations and Labeling Guide			
Input Type	Output Configurations		
	Digital	Analog Set 1	Analog Set 2
SDI DVID 3 or DVID 4	SDI Video + Key SDI Video + Video	Component/RGB (AVID 1,2,3)	Composite (AVID 4) S Video (AVID 5,6)
Component	SDI Video + Key SDI Video + Video	Component/RGB (AVID 1,2,3) Or Composite & (AVID 1) S Video (AVID 2,3)	Input Component (AVID 4, 5,6)
S Video	SDI Video + Key SDI Video + Video	Component/RGB (AVID 1,2,3) Or Composite (AVID 1) & S Video (AVID 2,3)	Input S Video (AVID 5,6)
Composite	SDI Video + Key SDI Video + Video	Component/RGB (AVID 1,2,3) Or Composite (AVID 1) & S Video (AVID 2,3)	Input Composite & (AVID 4)

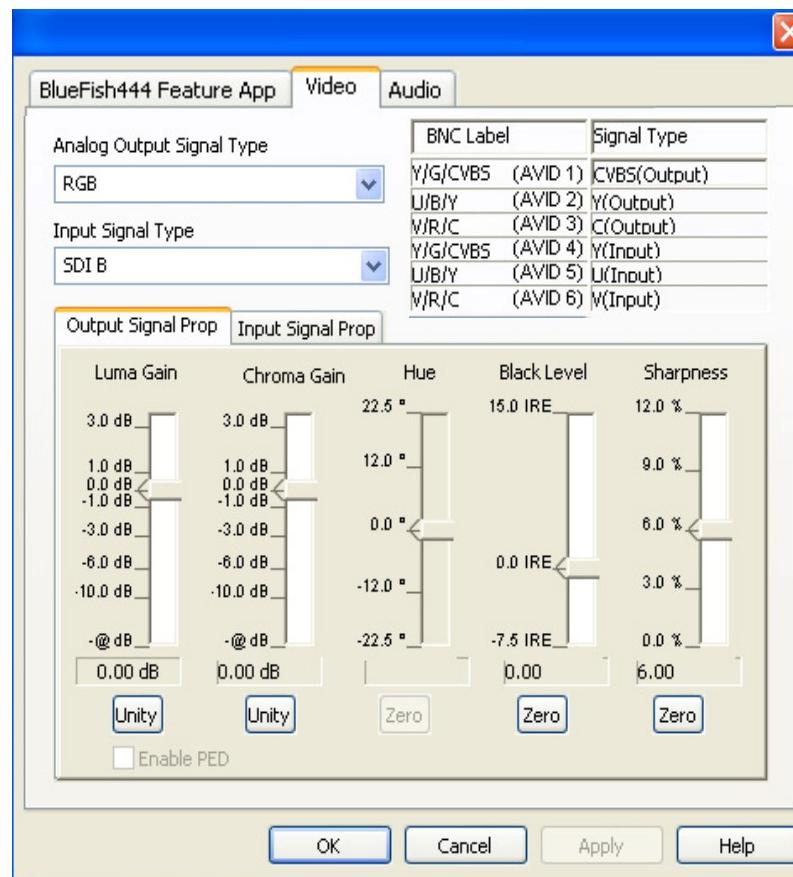


Analog Video Output Signal Properties.

The feature application allows you to manually adjust the analog output signal properties. By using the vertical slider bars on this tab you can adjust various signal properties for the output and save them as the default load up values.

The output signal fields that can be adjusted are;

- Luma Gain
- Chroma Gain
- Hue
- Black level
- Sharpness



Unity

This button centers each slider bar to the default values of 0.0

Enable PED

This adds the 7.5 IRE “pedestal” to analog NTSC signals



Analog Video Input Signal Properties

Analog input only.

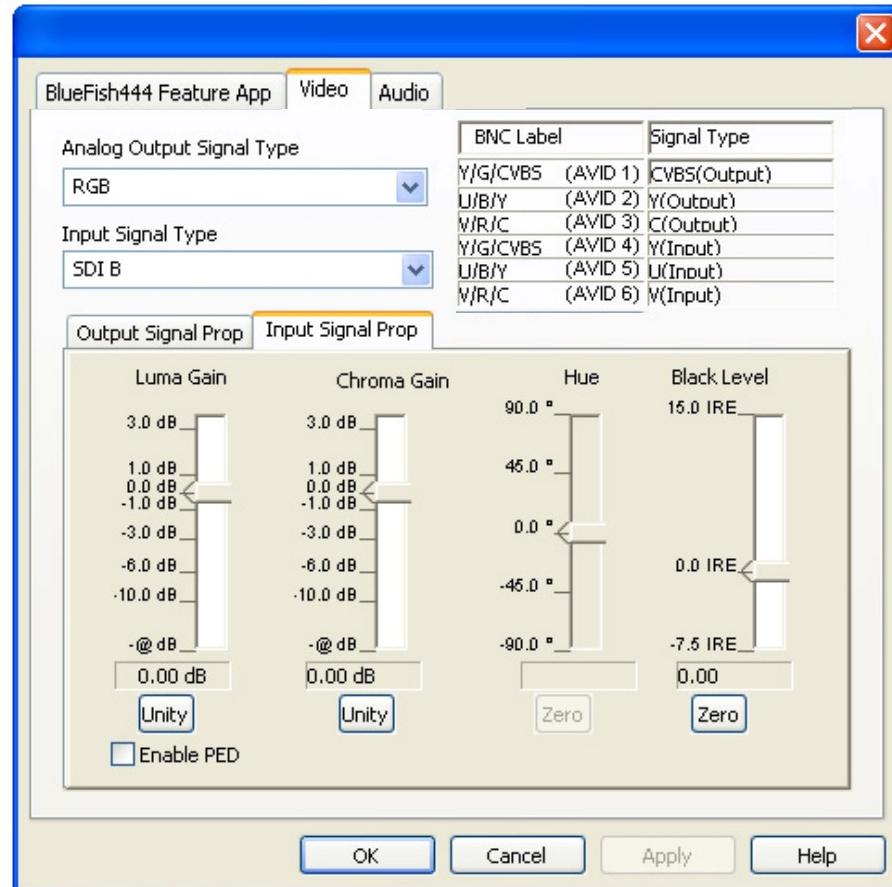
The input signal properties tab is similar to output except for the sharpness option has been removed.

Luma Gain

Chroma Gain

Hue

Black level



Unity.

This button centers each slider bar to the default values of 0.0

Enable PED.

Removes the 7.5 IRE “pedestal” from analog NTSC signals.

If you know your input has a pedestal information you will need to check the “Enable Pedestal” box.

Load Default values.

Loads the default values.

Save as Default.

Save the current settings as the default power up values.

**Refresh.**

Returns the value to the current defaults.

Close.

Close the Bluefish444 feature Application utility.



Audio I/O Settings

Depending on the type of Bluefish444 card installed, a range of audio options can be achieved.

The SD| Greed, Fidelity and Focus support both digital and analog audio, focus support analog audio output only. The tables outlines the connectively for audio.

The SD| Greed, SD| Fidelity

Type	Connection	Connect Type	Channels	
Digital Audio	External	BNC	8 Channels	I/O
Digital Audio	External	XLR	6 Channels	I/O
Digital Audio	External	BNC (SDI)	8 Channels per SDI	I/O
Analog Audio	External	XLR	2 Channels	I/O
Analog Audio	External	RCA	2 Channels	I/O

SD| Focus

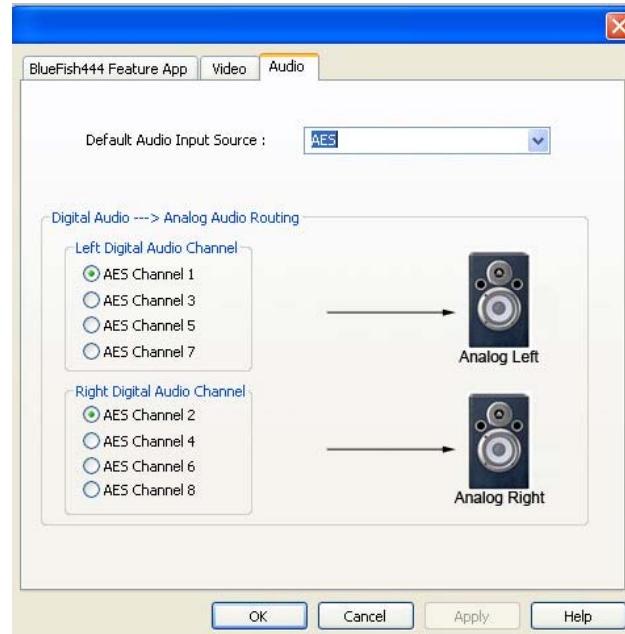
Type	Connection	Connect Type	Channels	
Digital Audio	External	BNC	8 Channels	I/O
Digital Audio	External	XLR	6 Channels	I/O
Digital Audio	External	BNC (SDI)	8 Channels per SDI	I/O
Analog Audio	External	XLR	2 Channels	Output
Analog Audio	External	RCA	2 Channels	Output

SD| Single Link Pro, SD| Prime

Type	Connection	Connect Type	Channels	
Digital Audio	External	BNC	8 Channels	I/O
Digital Audio	External	XLR	6 Channels	I/O
Digital Audio *	External	BNC (SDI)	8 Channels	I/O

In most cases conditions, applications will automatically select the audio input source, however you may wish to manually select it.

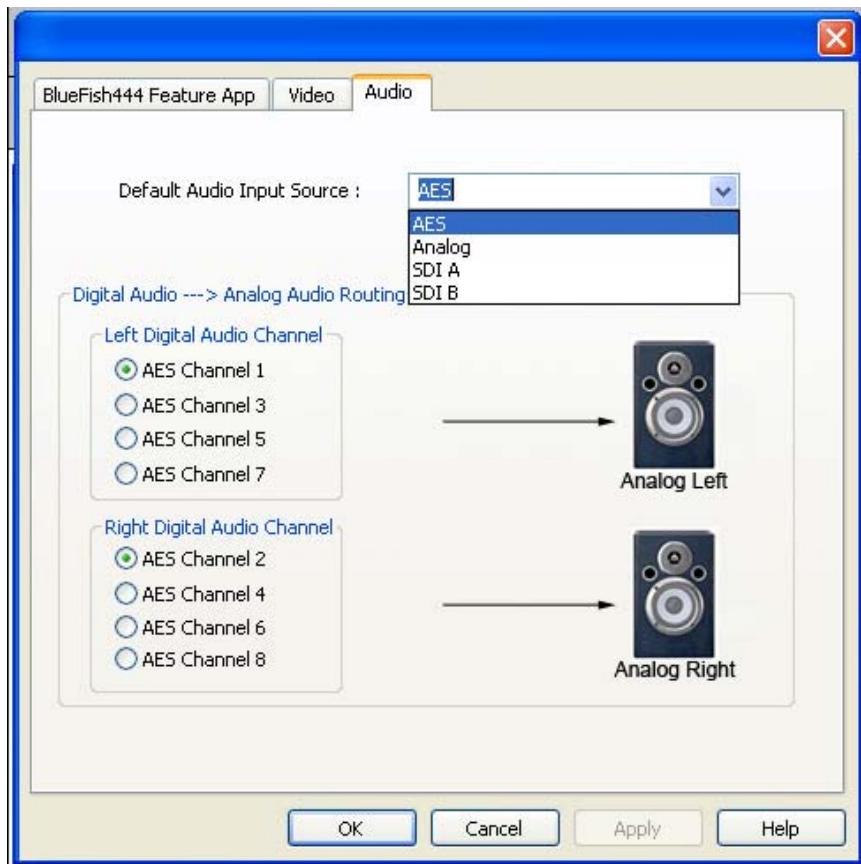
To do so just select the audio input type from the drop down list.





Digital Audio to Analog Audio Monitor Routing

With the SD|Greed you can monitor the 8 digital audio channels with the analog audio outputs. For example if you wish to listen to digital outputs 1 & 2 and wish to route them to the analog pairs for monitoring you simple select channels 1 and 2 to route to analog left and right pairs.





3rd Party Software Setup

Adobe Production Studio

Bluefish444 continues to support Adobe solutions with direct support for Adobe Premiere Pro 2.0, Adobe After Effects 7.0, Adobe Audition 2.0 and Adobe Photoshop CS2.

Adobe Production Studio Certified plug ins

Adobe Premiere Pro 2.0

Bluefish444 continues to support Adobe Premier Pro 2.0 with real-time playback preview of effects and supported 3rd party file formats with adjustable quality supported in Premiere Pro 2.0. Effects and transitions are rendered only on export so as to maintain the true 10 bit YUV uncompressed quality to your workflow. The range off effects previewed in real time is system dependant.

Bluefish444 has also added the ability to playback any supported file format, either uncompressed or compressed (dependant on system performance) that can be imported by Premiere Pro 2.0, such as AVI, TGA, Jpeg, Tiff and QuickTime etc.

Once again rendering the timeline during editing and playback is no longer required, only for intensive effects and during exporting to tape.





Playback performance is scalable, so as Premiere Pro 2.0 and system performance increases, so does the ability to add more streams of video, audio, stills, effects and transitions.

Bluefish444 have also added an offline capture module providing the ability to digitize to DV-AVI compressed file format via SD SDI or SD analog sources. At approximately 1/10th the file size of uncompressed SD 10 bit YUV v210 QuickTime files, makes it a perfect solution for SD or HD offline editing in conjunction with the project trimmer feature. Not only is the quality incredible but it is also compatible with Premiere Pro DV editing mode.

Note; Bluefish444 Premiere Pro 2.0 plugin's are not compatible with earlier versions of Adobe Premiere Pro.

Adobe Premiere Pro 2.0 also supports serial VTR deck control. Serial VTR control is support via the COM port not the Bluefish444 VTR ports. You can use the same VTR cable supported by Symmetry shipped with the Bluefish444 hardware

Adobe Premiere Pro 2.0 Features

- HD and SD 10 bit YUV uncompressed editing with the multiplatform QuickTime v210 file format
- Real time capture and playback in High Definition and Standard Definition in 10 bit uncompressed YUV
- QuickTime v210 file format.
- Supports real time playback of imported QuickTime v210 files generated from 3rd party QuickTime supported applications with our 10 bit YUV QuickTime v210 codec.
- Preview in capture, playback and monitor windows.
- Multiple audio channel output support and management features for 5.1 surround sound monitoring.
- Support for CGR and Non CGR editing modes.
- Extended support for optional P and Psf output option
- Full support for SD and HD color matrix conversion.
- Premiere Pro and After Effects dual mode support.
- Accelerated MPEG 2 encoding with Adobe Media encoder with RAGE N|Code
- HD and film offline editing with EDL export to Symmetry for 10 bit RGB conforming and DI.



Advanced Playback Options.

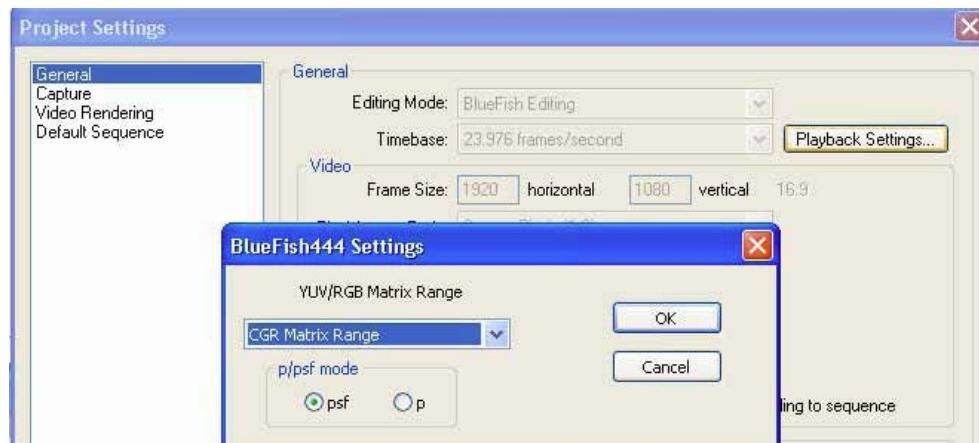
Bluefish444 has added two professional features to Premiere Pro 1.5 accessed in the Playback settings in the General Preferences of the Project Settings.

CGR and SMPTE matrix color range.

This feature enables Premiere Pro 1.5 to work in CGR and SMPTE color range during playback.

If your source data contains super white or super black i.e. the full RGB color range of 0 to 1024 you may wish to maintain these values through out the editing process. this can be achieved by using the "CGR Matrix Range".

If your source does not contain super whites and super blacks i.e. color range of 64 to 960, then you may wish to use the "SMPTE Matrix Range". CGR Matrix Range = maintains super blacks and whites, 0 to 1024 SMPTE Matrix Range = maintains SMPTE color range, 0 to 960.



P/Psf mode.

When editing in HD modes Bluefish444 enables Premiere PRO 1.5 to capture and playback 1080P (Progressive scan) modes. 1080p 23.976, 24, 25 and 30 frame per second progressive footage cannot be monitored on broadcast monitors because the vertical refresh rate would be too low. To get around this problem and allow progressive material to view on a standard broadcast monitor "psf" was devised. This sends the progressive frames down the cable odd lines first then even lines, i.e. like two 'pseudo fields' as if it were an interlaced signal. The material is, of course, really progressive (i.e. all lines in the frame were captured at the same instance in time). Therefore, to avoid possible confusion the 'progressive fields' are referred to as "segments". Consequently, we use the abbreviation "psf" for "Progressive Segmented Frame".

720p 59.94 and 60 video modes do not need a psf option because the vertical refresh rate is already fast enough to display on a standard broadcast monitor.

Bluefish444 provides two presets, both defaults to psf mode when opened.

Bluefish444 HD 1080 23.967

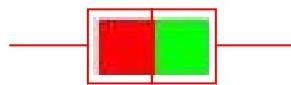
Bluefish444 HD 1080 24

If you wish to change the video mode on the cable to P (progressive) you can do so by opening up the project settings, selecting general and then the playback options tab next to the time base drop down list.

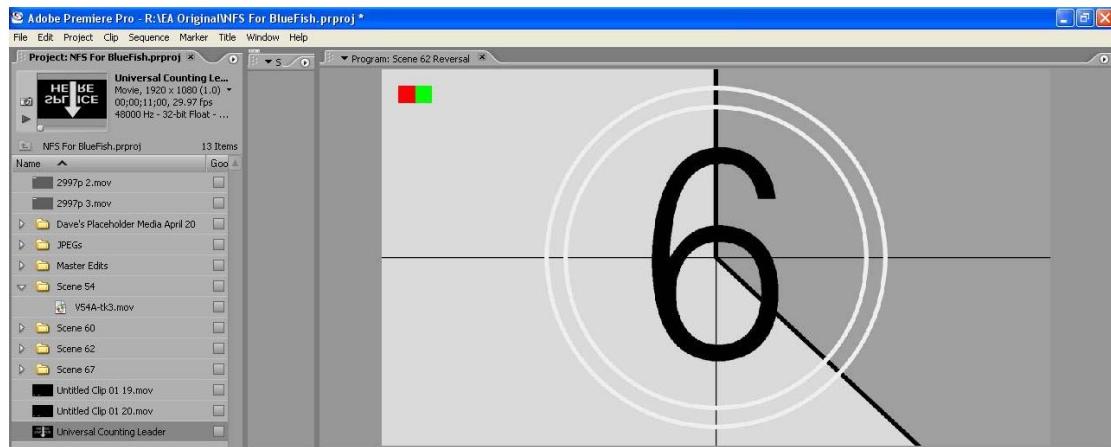


Real Time Playback Monitor

Preview Playback Drop Frame
 RED = Preview has dropped frames
 Green = Preview has not dropped frames



NON Real Time Indicator
 RED = Effects are not processed in real time
 Green = Effects processed in real time



Supported Video Modes

High Definition.

- 1080i 25fps, 1080i 29.97fps, 1080i 30fps.
- 1080p 23.98fps, 1080p 24fps, 1080p 25fps, 1080p 29.97fps, 1080p 30fps.
- 1080psf 23.98fps, 1080psf 24fps
- 720p 59.97fps, 60fps.

Standard Definition.

- NTSC 720h 486 29.97fps.
- PAL 720h 576 25fps.



Setting up Premiere Pro 2.0 with Bluefish444

Scratch Disks.

The first thing you are required to do is set up your scratch disk.

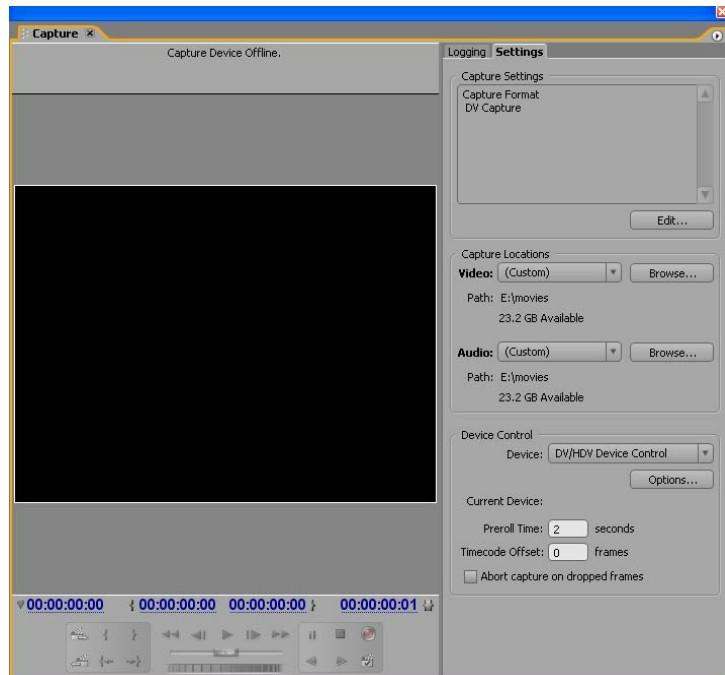
This should be your fastest drive configured to support the video and file format you intend to capture and playback your footage from.

For further information on storage solutions see Appendix C Storage Arrays and Configurations.

Ensure that the preferences settings are correctly setup for your scratch disks and the paths are directed at a valid Media Disk array that can sustain the data rate for real time playback for HD or SD modes.

You can do this via selecting Edit -> Preferences -> Scratch disks.

Ensure all paths point to your Media array.



Audio

Bluefish444 provides support for 48 KHz uncompressed multi channel audio support via the audio interface of the Bluefish444 HD and SD product range. All audio playback is output via the Bluefish444 hardware.

Bluefish444 provides full support of Multi channel and surround sound 5.1 audio monitoring. Provides full audio routing support providing support for channel to track routing.

Enabling the Audio driver.

1. In the Adobe Premiere Pro menu bar select EDIT -> PREFERENCES -> AUDIO HARDWARE.
2. In Audio Hardware section, select the input/output drop down list and select "Bluefish444 ASIO".
3. Select OK.

Using other sound card devices.

Monitoring through other 3rd party sound cards or devices is not recommended, video and audio sync is not guaranteed



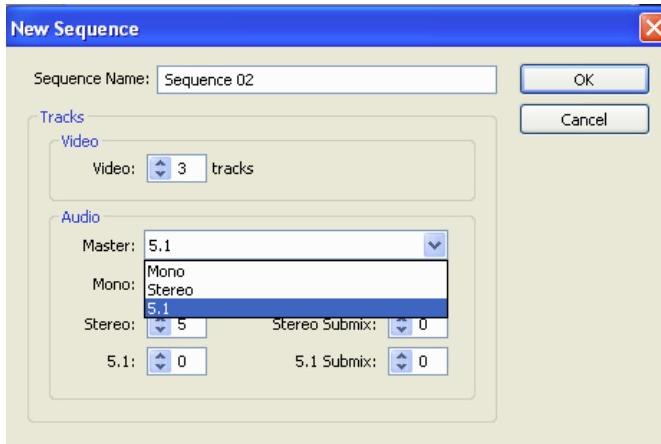
and you may experience audio delays and inconsistencies in audio playback.

Surround Sound Monitoring and Routing.

Bluefish444 supports Adobe Premiere's 5.1 surround sound output.

You can assign certain tracks on the timeline and route them to specific channels via the Bluefish444 hardware.

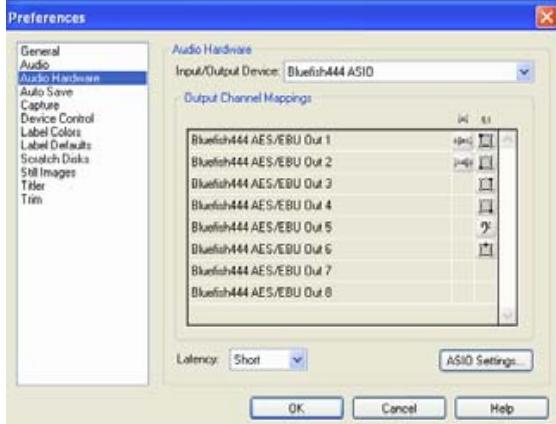
1. Start a new sequence.
2. In the Audio master drop down list set master to 5.1.
3. Select OK.
4. Go to Edit then Preferences and select Audio Hardware.
5. For Input/output device select Bluefish444 ASIO option.



You will be presented with a range of other information in the Output Channel Mappings. This allow you to map the 5.1 sound channel outputs (Left front and rear, right front and rear and centre) to the physical audio outputs of the Bluefish444 hardware.

6. Now open up the audio mixer interface.
7. On the Menu bar go to Window -> Audio Mixer to load the Audio mixer interface.

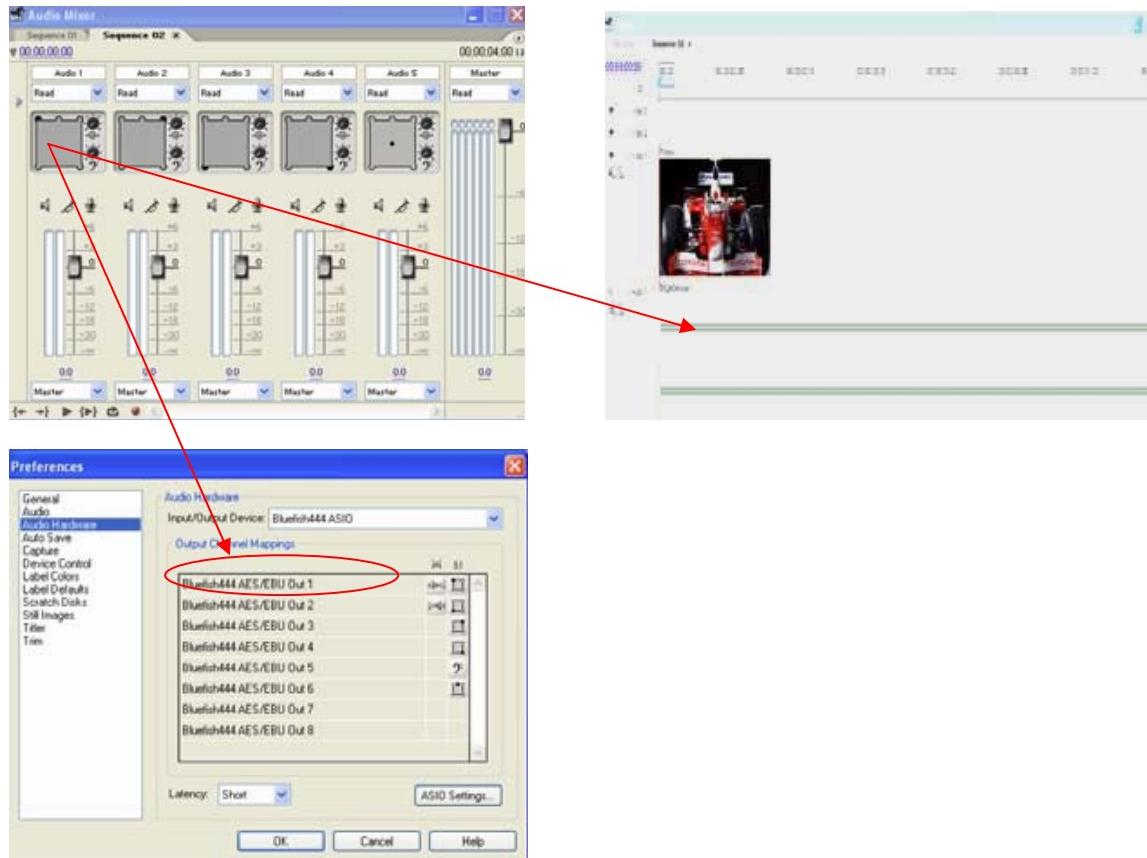
You will be presented with a window similar to the following.





Each track on the timeline is mapped to a specific audio section in the Audio mixer interface. For example Audio1 on the timeline corresponds to Audio1 in the audio mixer.

For the example in the diagram below, the audio file in track one of the timeline will be mapped to the left 5.1 audio channel which is mapped to the Bluefish444 AES/EBU Out 1 channel. If you lay another audio track in Audio2 in the timeline that will be mapped to the right 5.1 audio channel which is mapped to the Bluefish444 AES/EBU Out 2.





Multiple Audio Channel Output.

Alternatively you can assign one track to output to all audio channels of the Bluefish444 card. This is done by simply centering Audio 1 section which is linked to the Audio 1 track on the timeline. By centering the control point in the center you are effectively telling Premiere to route the audio on track 1 in the timeline to all available Bluefish444 audio channels



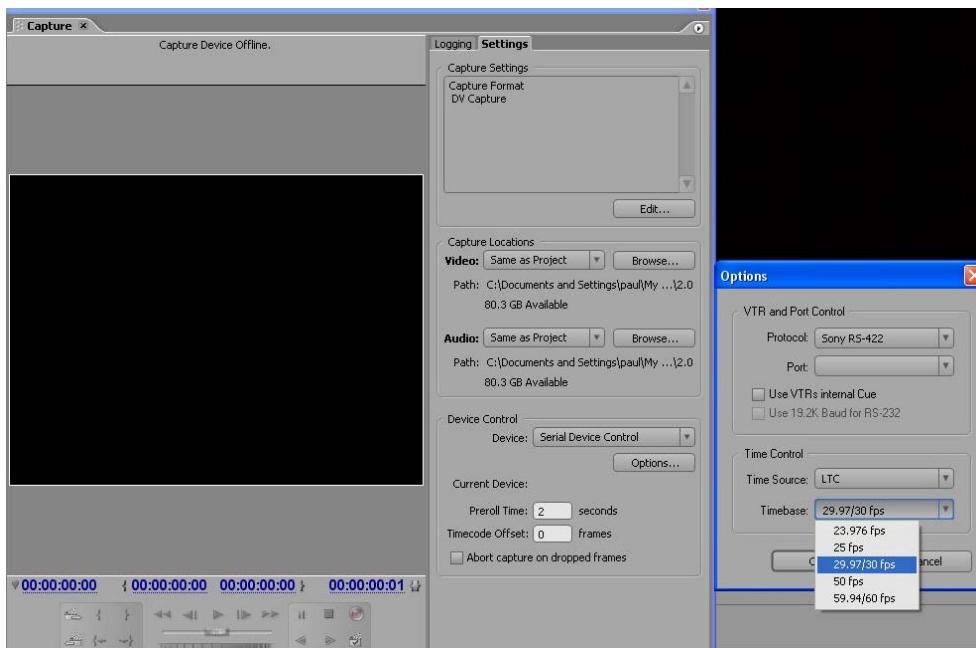
For further more detailed information on the Audio features and controls for Adobe Premiere Pro 1.5 please refer to the manual.

Deck Control

Premier Pro Ships with built in VTR control.

Select Serial VTR under Device control

For more information please refer to the Adobe Premiere Pro 2.0 manual for deck control settings.





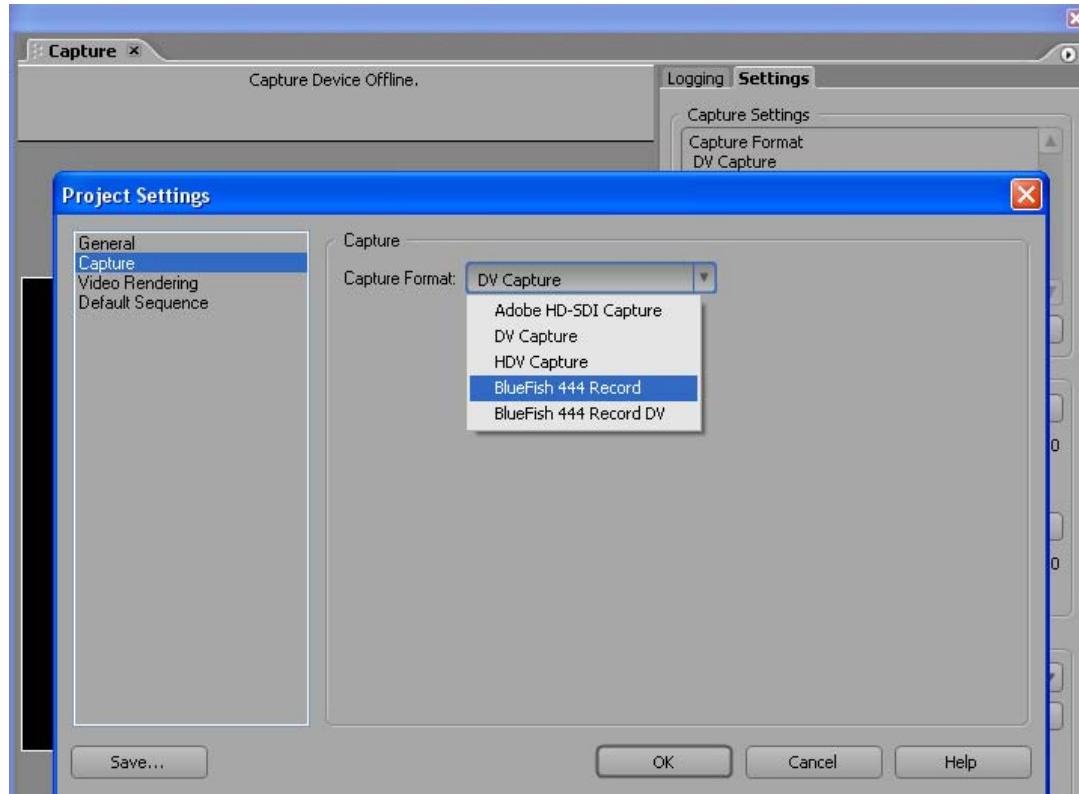
Capturing with Premiere Pro 2.0

Bluefish444 have developed two capture module plug ins that are selectable in Project settings, Capture options are;

Bluefish444 recorder = QuickTime 10 bit YUV uncompressed
Bluefish444 DV record = DV AVI Compressed

Each module is selectable in any edit mode supported by Adobe Premiere Pro as long as the captured resolution and frame rate is the same.

For example when you are in PAL DV mode you can capture to DV format via the Bluefish444 capture card for video and audio by selecting the Bluefish444 Record DV capture module. If you desire to capture QuickTime 10 bit YUV v210, select Bluefish444 record.



When selecting a preset, Premiere Pro 2.0 will default to Bluefish444 record, which will digitize to QuickTime 10 bit YUV uncompressed file format.



Exporting a Movie to Bluefish444 10 bit YUV v210 QuickTime.

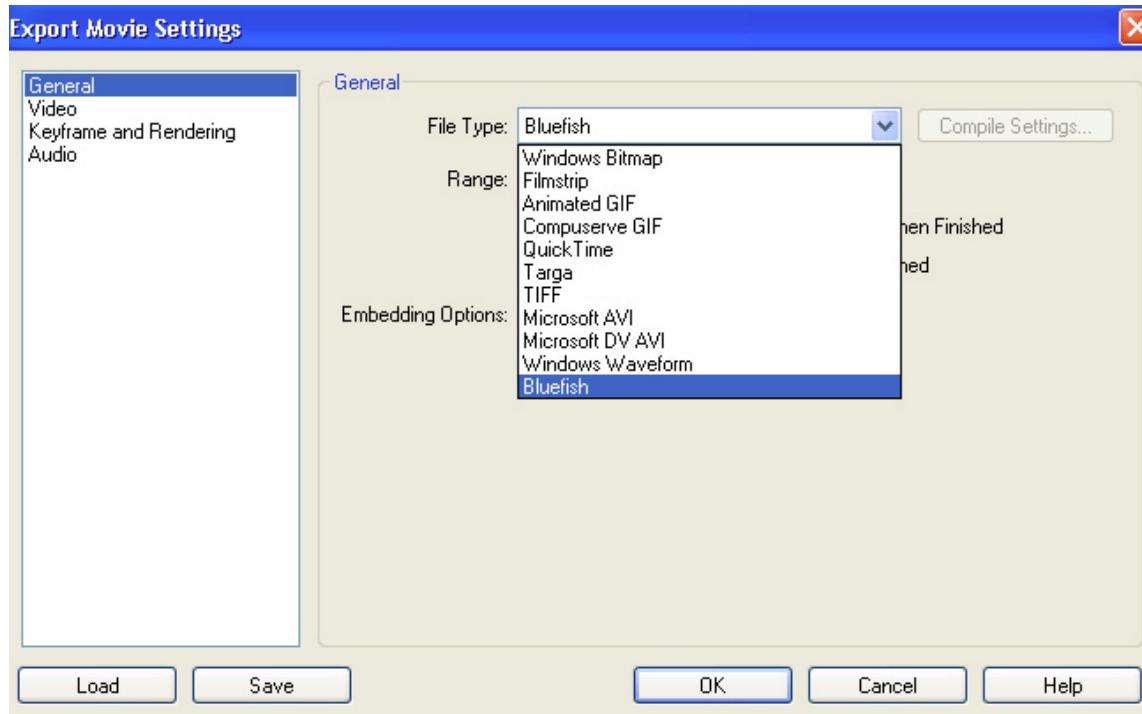
In some cases you may wish to export your sequence to other media such as Windows media 9 or MPEG 2. or you may wish to export your movie to another Bluefish444 and Adobe Premier Pro solutions
If you wish to export to Bluefish444 QuickTime v210 you will need to select the File type to Bluefish444.

1. Select File -> Export -> Export to Movie.

Here you will have an option to name a file and choose a location.

2. Select the settings button.
3. In the file type drop down box select Bluefish as the file type.
4. Click on OK to start the process.

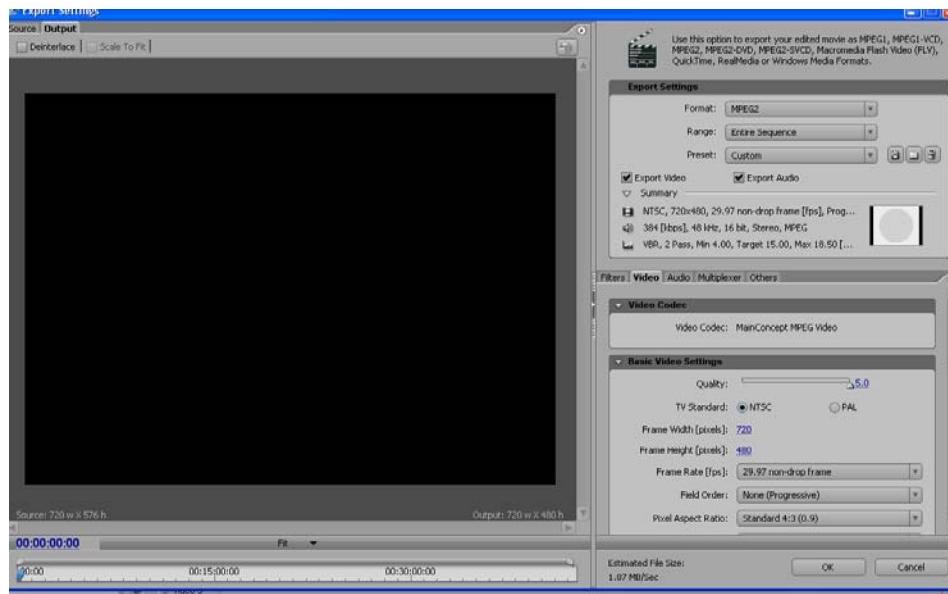
Alliteratively you have the option to export your movie to a variety of file formats and even encode to





Exporting a Movie to MPEG 2 with Adobe Media encoder and RAGE N|Code

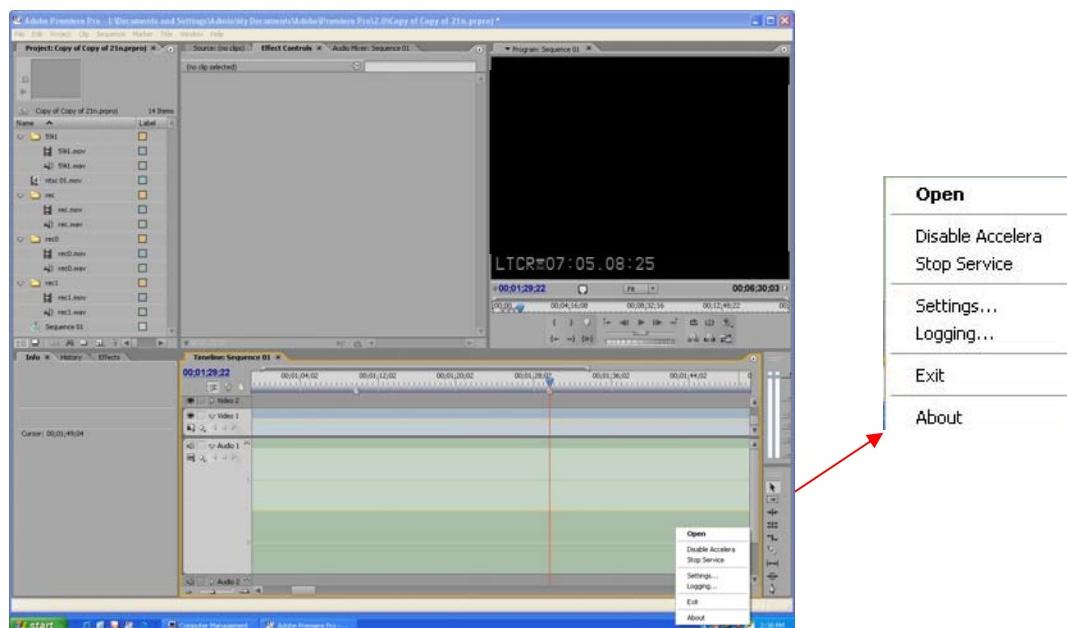
If you have installed the RAGE N|Code accelerator card, you can take advantage of accelerated real time rendering to MPEG 2 file format via adobe media encoder.



Acceleration is Automatic when you have the RAGE N|Code card installed.

When the MPEG 2 encoding request begins the RAGE N|Code Accelerator card will take the intensive processing away from the CPU and process it in hardware.

RAGE N|Code assisted acceleration can be disabled at any time via the Accelerator console and selecting “Disable Accelerator”



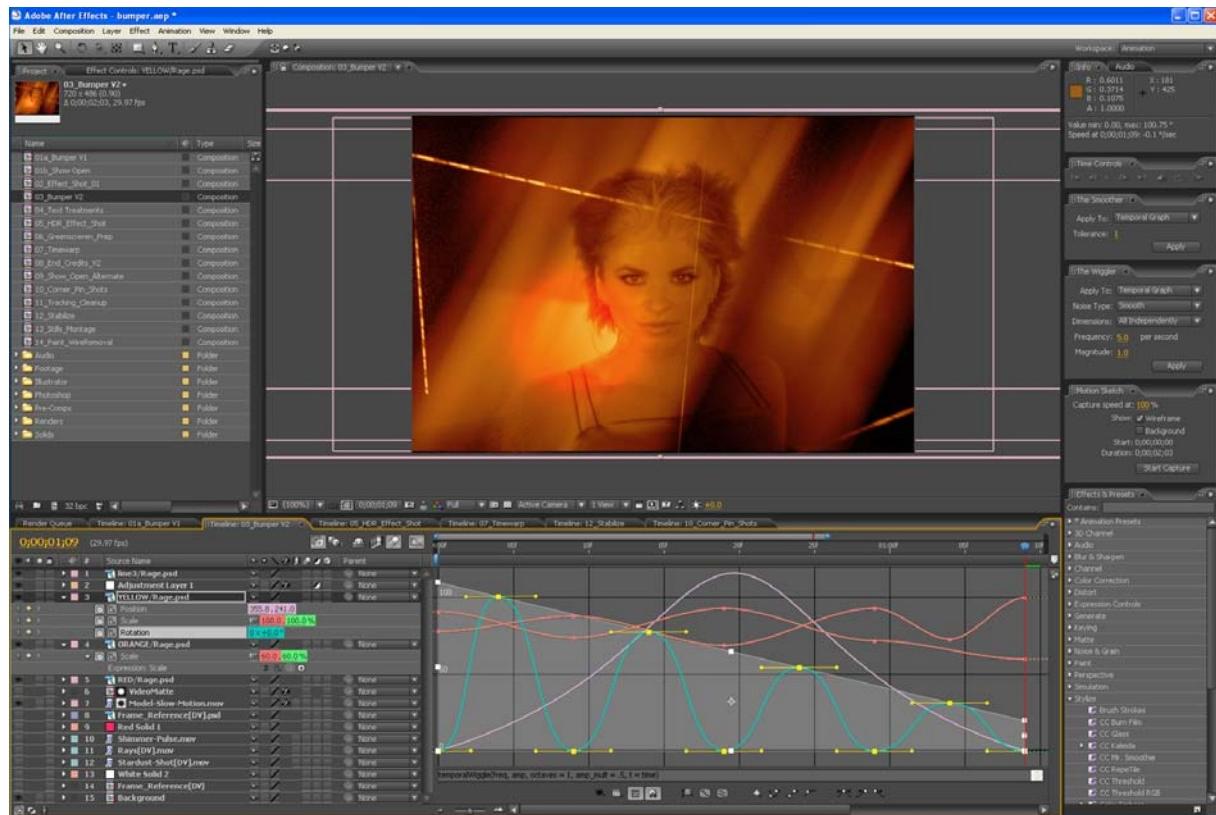


Adobe After Effects 7.0



(Application Software not included)

Animate your ideas. Adobe® After Effects® 7.0 software helps you create compelling motion graphics and blockbuster visual effects with efficiency, precision, and infinite variety. Take advantage of unmatched integration with other Adobe software, flexible 2D and 3D compositing, and hundreds of effects and Animation Presets to bring a new dimension to your film, video, DVD, and Macromedia® Flash® productions.



- HD and SD Broadcast real time monitoring
- Real-time playback via RAM player
- 8 and 10 bit RGB frame buffer support
- 8 and 10 bit project mode support
- Dedicated QuickTime v210 exporter
- Real-time SD and HD color space conversion.



Setting up Adobe After Effects 7.0.

Adobe After Effects requires no settings to enable video monitoring support. This feature will automatically be enabled once a supported composition setting is selected.

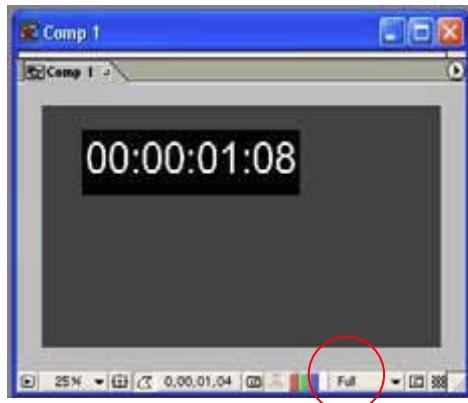
Supported Broadcast Output modes

Video Mode	AE 7 preset	Supported Video Mode and frame rate
HD 1080	HDTV 1920 x 1080	1080i 25fps, 1080i 29.97fps, 1080i 30fps, 1080p 23.98fps, 1080p 24fps, 1080p 25fps, 1080p 29.97fps, 1080p 30fps, 1080psf 23.98fps, 1080psf 24fps, 1080psf 25fps.
HD 720	HDTV, 1280 x 720	720p 60fps, 59.97fps.
SD PAL	PAL D1/DV, 720 x 576	PAL 720h 576 25fps
SD NTSC	NTSC D1, 720 x 576	NTSC 720h 486 29.97fps

Enabling Video monitoring output

1. Create a new project
2. In the Menu bar, select Composition,
3. In the Basic tab, select a supported AE 7 preset
4. IN the composite windows, set the composite resolutions settings to full.

If you wish to utilize more memory for animation and motion effects then you can reduce the composite resolution to half or a quarter. This will disable the Bluefish444 preview with in After Effects.



Changing Bit depths.

After Effects can now take advantage of 10 bit RGB frame buffer video preview modes when in 16 bit project modes. When in 16 bit project mode After Effects will provide a 10 bit RGB frame and output to 10 bit 4:2:2 or 10 bit 4:4:4.

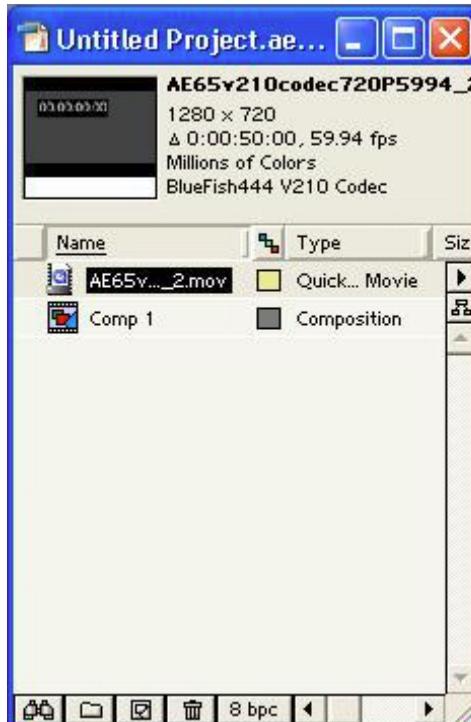
To change project modes (Bit Depths) Via the interface.

1. Hold down the Left ALT key on your keyboard and at the same time select the 8 bpc text in the After Effects project Bin.
2. Each click will switch between 8 and 16 bit project modes.



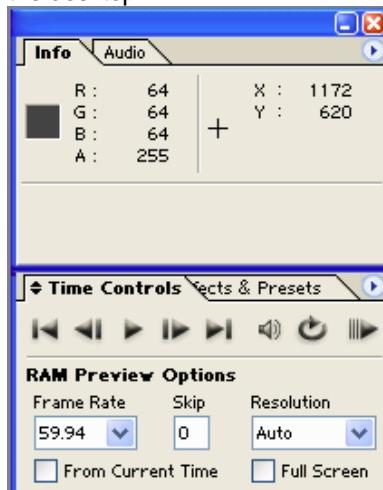
To change project modes (Bit Depths) Via project Settings.

1. Go to the menu bar and select File -> Project Settings
2. Select the color depth of your choice in the color depth drop down box.



Real Time Playback

You can achieve real time playback of your timeline using After Effects RAM player feature. Adobe After Effects utilizes how much ram you have on your system. So the golden rule of thumb for compositing especially in HD is more the better. Make sure you select the frame rate that corresponds to the frame of your composite settings. Depending on the resolutions size of your Desktop preview window in After Effects can affect playback performances as a larger frame has to be written to the desktop.





Exporting to QuickTime with After Effects.

If you wish to export your projects into Premiere Pro 2.0 for real time playback you can use the Bluefish444 QuickTime Exporter plug in

NOTE, Premiere Pro and Symmetry will not support QuickTime files rendered from After Effects with the After Effect QuickTime Movie exporter via the Bluefish444 v210 codec. You must use the Bluefish444 QuickTime Exporter. This is due to After Effects not guaranteeing QuickTime moves on a specific byte boundary that is required for RT playback in Pro 2.0. This is more apparent in HD resolutions than SD resolution QuickTime files.

Alternatively if you do not intend to use Premiere Pro, render to the Cineon format and then import fro file sequence into Symmetry for exporting to tape.

The Bluefish444 QuickTime export plug-in.

This plug-in allows you to export to the QuickTime v210 file format that supports Premiere Pro 2.0, Quick Clip Pro and Symmetry for real time playback

Using the traditional QuickTime Movie format export via the Bluefish444 codec is not support fro playback in Premiere Pro 2

The Bluefish444 exporter will not support embedding of audio, the exporter is for video only. Simply export audio only as a separate pass from your same composition to a 16 bit 48 KHz wav file.

Frame rate.

The frame rate here should always match the composite settings and the broadcast mode you are using.

Scan Mode.

- Interlaced
- Progressive.

Conversion Matrix.

CGR.

Color space conversion between Standard Definition YUV and "Full Scaled" RGB (8 bit: 0 - 255, 10 bit: 0 - 1023).

When rendering with CGR enable you maintain the full color levels. Video safe colors are ignored.

SMPTE.

Color space conversion between YUV and "SMPTE Scaled" RGB (8bit: 16 - 235, 10bit: 64 - 940).

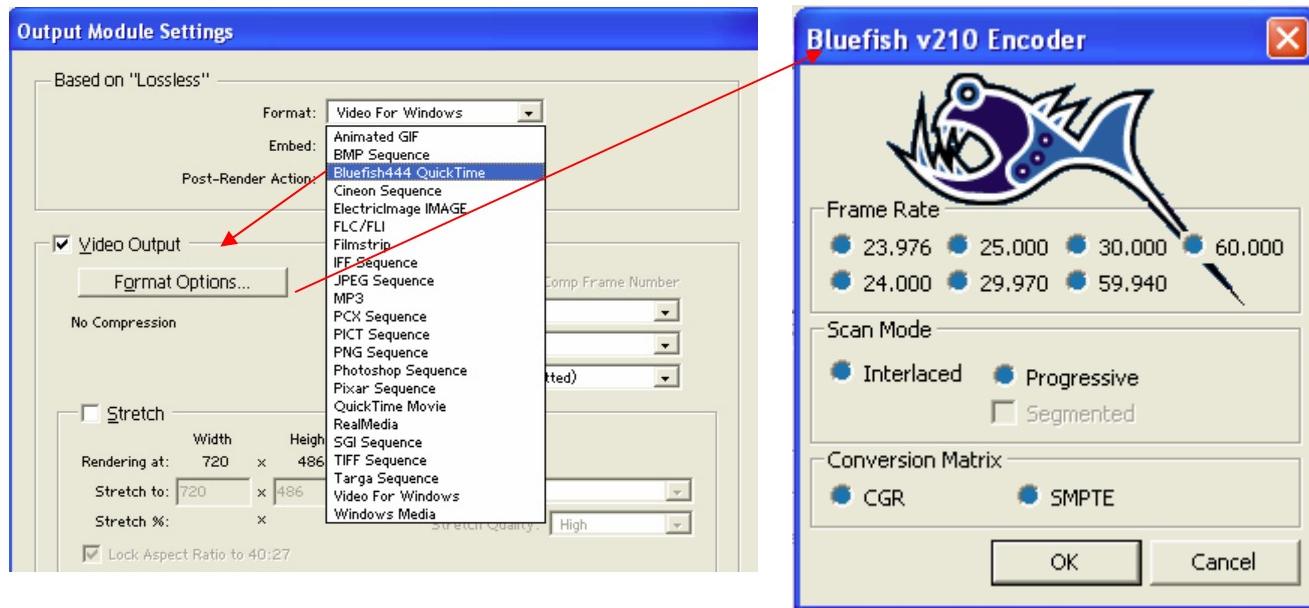
When rendering with SMPTE enabled, video safe colors are supplied.

Rendering with Bluefish444 QuickTime Export plug-in;

1. In the After Effects menu bar
2. Select Composition -> Make Movie
3. Go to the Current Render Details section of the Render Queue Dialog Box.
4. In the Output Module section, select the "Lossless" option text and it will open the "Output module".
5. Select Bluefish444 QuickTime in the Format drop down list
6. A Dialog box called Bluefish v210 Encoder will open.
7. In the Video output sections select Format options button.
8. Enter your frame rate equal to that of the composition you are exporting.



9. Select the scan type as either Interlaced or Progressive
10. Select the RGB/YUV matrix you wish to use.
11. Select the X to close the dialog box.
12. In the Output To section select the *.MOV option text and enter a file name and path to render your QuickTime movie to.
13. Select Render to begin the render process.





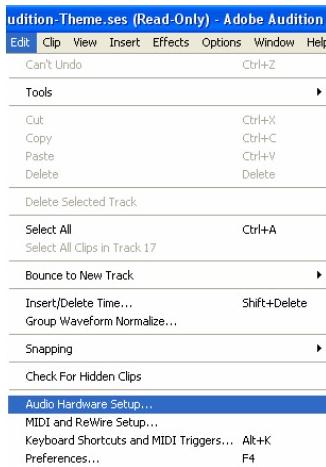
Adobe Audition 2.0

With support for ASIO audio interface now supported by Audition 2.0, Adobe and Bluefish444 customers have the ability to monitor audio output on the same system with up to 8 channels of audio, perfect for 5.1 and 7.1 surround sound audio editing.



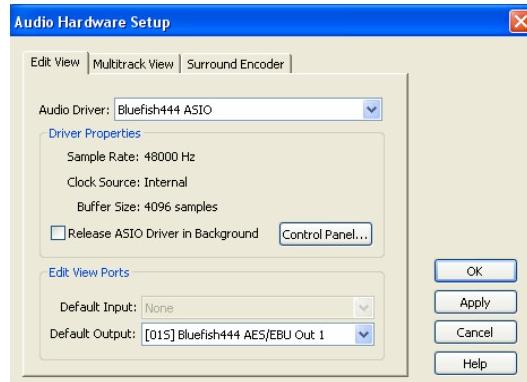
Setting up Adobe Audition 2.0.

1. Select Edit in the menu TAB
2. Select Audio hardware Setup





- Under the following tabs; Edit View, Multitrack View and Surround Encoder, change the Audio Device to Bluefish444 ASIO.





Photoshop CS2

Bluefish444 Photoshop Exporter adds an important plug in for broadcast graphic designers by allowing you to quickly see your Photoshop images through any Bluefish444 video card. This is important for checking color, positioning, line width, and other graphic issues that can change when moving images from a VGA to a broadcast monitor.

Features

- Support for NTSC, PAL, HD720p, and HD1080i.
- Pre built actions for hotkey updates.
- Plug-in outputs both the image and the alpha channel on dual-link cards.
- Support for 8-bit and 16-bit images.
- Automatic YUV conversion.
- Support for ALL Bluefish444 cards.

Using Actions with the Bluefish444 exporter

Bluefish444 exporter plug-ins includes an Action preset file called Bluefish444.atn which is loaded to the Photoshop actions folder in the installed folder.

Actions can be linked to the Bluefish444 export plug ins by assigning keyboard Shortcuts

To load and assign shortcuts the Bluefish444 actions.

1. Open up the Actions dialog box and select the Options arrow button.
2. Select the Bluefish444 option. this will load the Bluefish444 pre defined actions to the Actions Pallet.
3. Select an Action, say "TFT - Bluefish444 NTSC Export", select the options arrow button. This will option the dialog side bar as before.
4. This time select the Action Options The action dialog box will open.
5. In the function key drop down list, assign a function Key of your choice.
6. Click on OK.
7. Now open up a project in NTSC then select F5 and you will see the project window output to the Bluefish444 SDI/Analog output on your broadcast monitor.



Fusion 5.X

Bluefish444 provides SD and HD frame buffer support for Eyeon Fusion 5.x.

Fusion supports real time playback via the Bluefish444 video output cards via RAM player cache and real-time preview

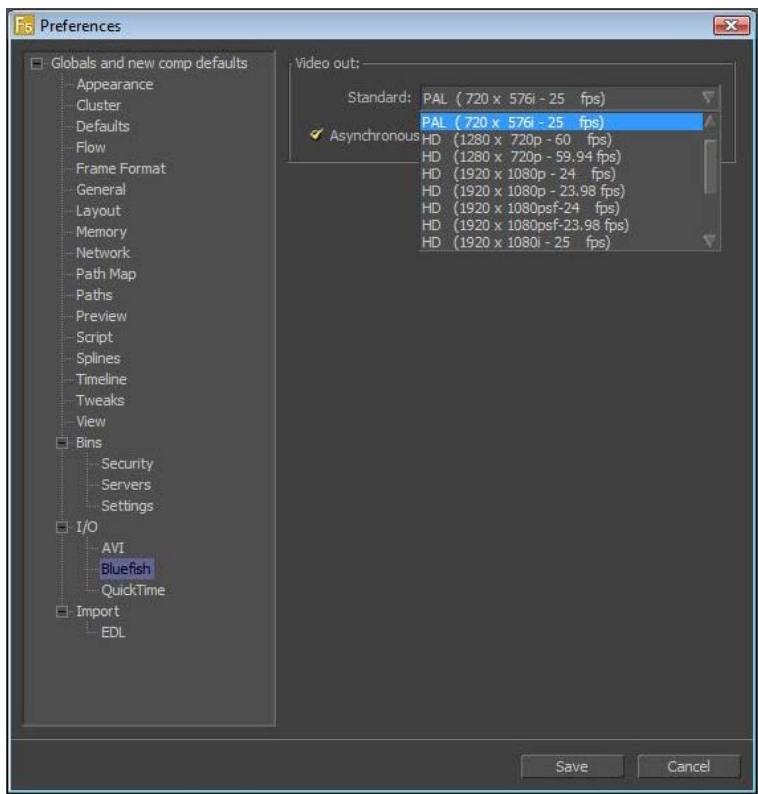
Fusion supports 8 bit and 10 bit RGB modes

The plug ins shipped with the Digital Fusion software and will automatically be a listed option in the I/O preferences tree if a supported bluefish444 card is installed.

Setting up Digital Fusion 5.X

Frame buffer monitoring globals

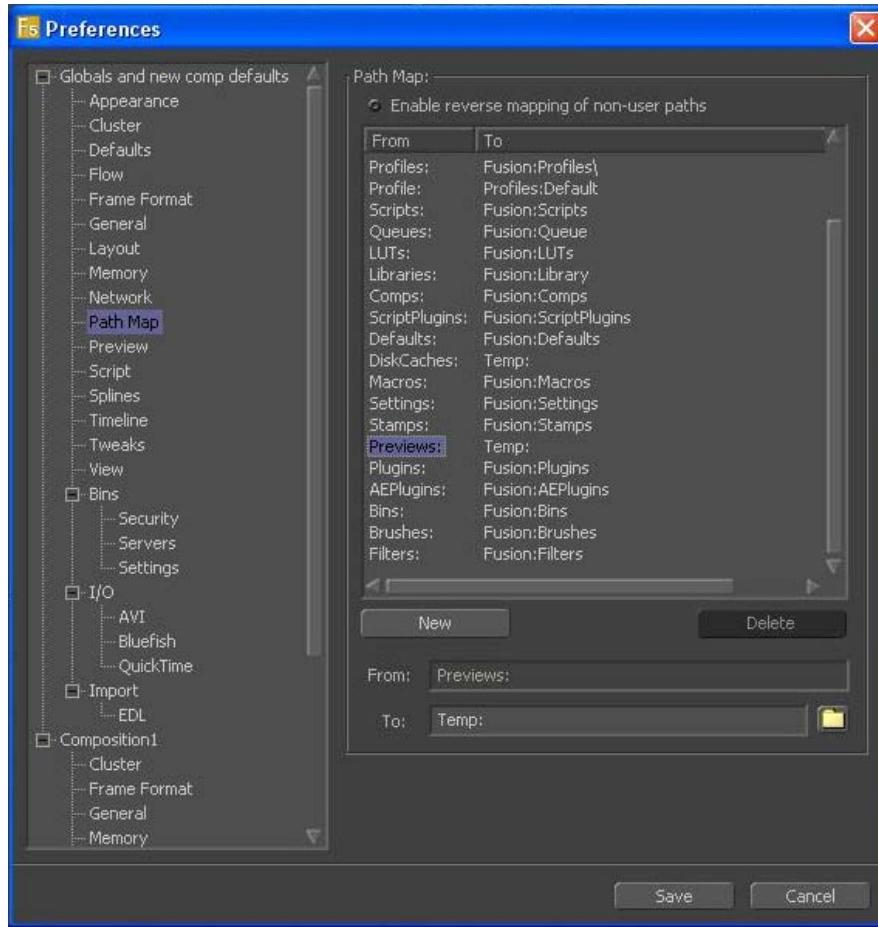
1. Load Fusion and close the composition flow that loaded as default
2. In preferences, expand the “Globals and new comp defaults”
3. Under I/O select the Bluefish444 option
4. Select the Video standard you wish to output, the card installed will depend on the listed modes you can use
5. For 10 bit support select the 10 bit option
6. For 8 bit support deselect the 10 bit option.
7. To switch between RGB and YUV mode, toggle YUV option





Path settings

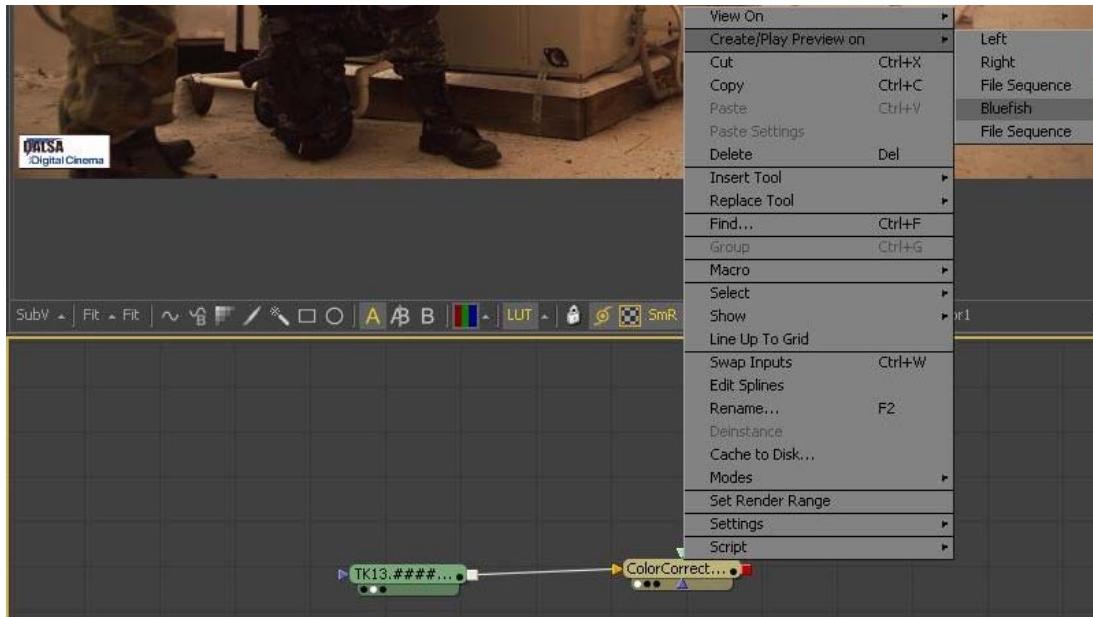
1. In Preferences, expand the “Globals and new comp defaults”
2. Select Path Map option.
3. Change the following Path Maps options to your certified array for RT SD and HD payback;
 - a. DiskCache
 - b. Previews





Node monitoring

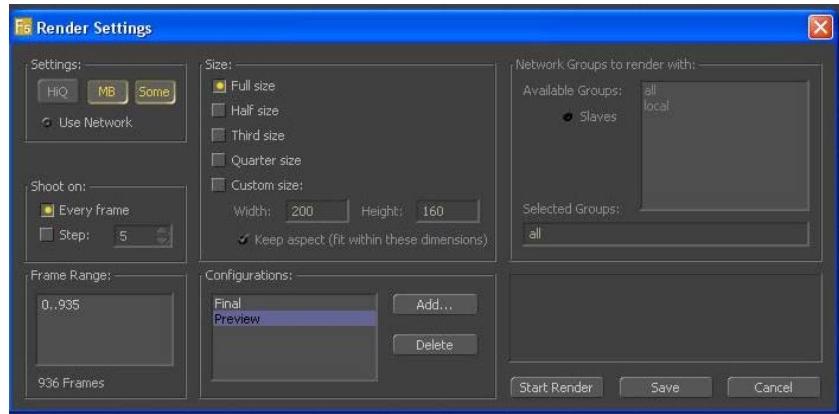
1. Generate a new composition flow and add a loader node and attach a CC node.
2. Ensure the Output settings equals the composition resolution in the preference settings
3. Right click the CC node and select the option arrow for View On and select the Bluefish.
4. Select Play. Fusion will render and cache to RAM until all the available RAM is used. Real time preview will occur after the first render pass.



Preview

Fusion will default to creating a pre view in the preview paths folders that is set in the preferences section. This path along with all other paths should be pointing to the fasted array for your projects

1. Right Selecting the CC Node, Select the option arrow for Create/Play Preview on,
2. Select Bluefish444 option
3. The render setting dialog will pop up
4. Select your desirable options
5. Select Start Render.
6. Fusion will render to the Array to the Preview folder



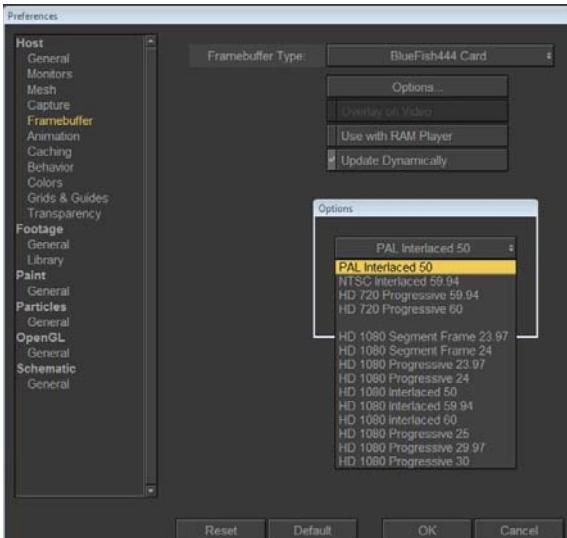
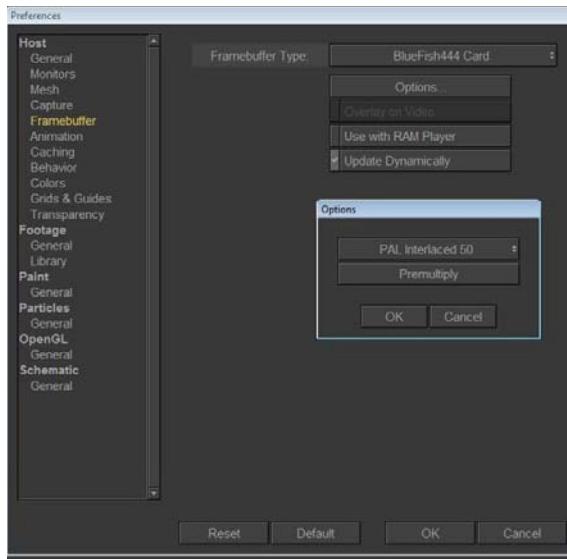


Combustion 4.0

Bluefish444 provides SD and HD frame buffer support for Autodesk compositing application. Frame buffer support is 8 bit RGBA with option to pre multiply the alpha in HD and SD video modes.

Setting up Combustion 4.0

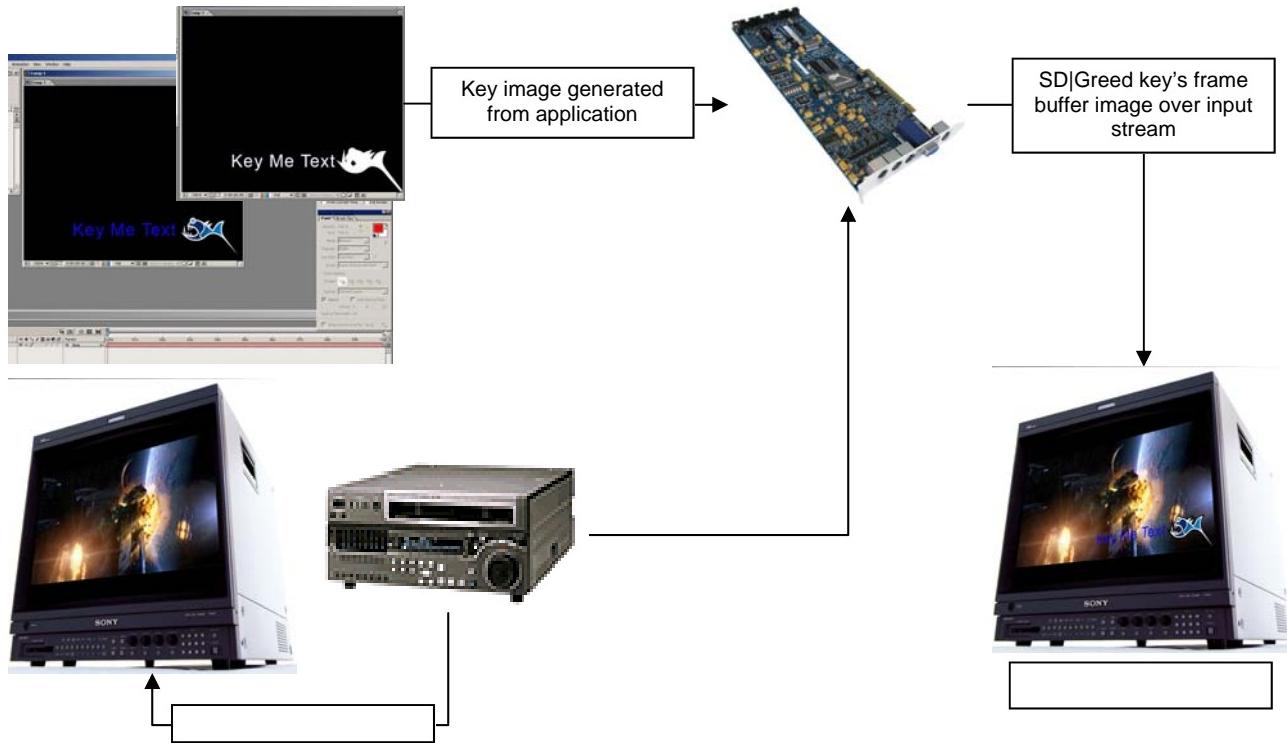
1. Launch Combustion 4
2. Under preferences, select frame buffer
3. Under frame buffer type, select Bluefish444



4. To change the video monitoring output to match your composition, select options
5. Select the available Resolutions supported via the bluefish444 card
6. To use with RAM player select the option to enable.
7. RAM player preview will be real time after the first render PASS to RAM



The Onboard Keyer



The onboard keyer feature provides the ability to overlay over the input signal in real time with any frame buffered image or frame generated from applications that support RGBA.

This provides studios and live broadcast environments the ability to brand transmissions, perform logo insertions and output copyright signals to tapes etc

Symmetry will be supporting TGA sequential playback which also can be used to playback sequences for internal keying.

Note; you can not capture when onboard keyer is enabled.

How to use the onboard keyer

1. Connect the output of the Bluefish444 card to a valid SDI monitor
2. Connect the HD card Genlock input to a sync reference via the SDI cable. (use the deck reference)
3. Launch the Bluefish444 feature application tool and enable the onboard keyer in the Misc functions section of the feature application.
4. If the image is positioned incorrectly, adjust the horizontal and vertical timing adjust by adding a value and pressing "SET"
5. Launch your supported digital content creation tool, for example Adobe After Effects. Set the composition resolution and frame rate to the input of the source you wish to overlay.
6. You should see the input source outputted to the SDI monitor.
7. Create some content like text, the text will be overlaid in real time.
8. You can also create an animation loop by loading the animation to RAM player and looping the playback.
9. Ensure to turn the Onboard keyer feature off if you intend to use it with other applications that require input functionality such as Symmetry and Adobe Premiere Pro.

blUefish444



blUefish444